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Result
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Maximum Match 100%
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Perfect score:
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 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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length: 2000000000
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297	307	309.5	311	312	327.5	334.5	337.5	337.5	357.5	357.5	362	362	365	366	369.5
36.3	37.5	37.8	38.0	38.1	40.0	40.9	41.3	41.3	43.7	43.7	44.3	44.3	44.6	44.7	45.2
155	155	154	155	178	157	158	155	155	155	155	158	155	156	158	159
N	N	N	N	N	N	N	N	N	N	H	N	N	H	N	N
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pathogenesis-relat	pathogenesis-relat	major allergen Api	pathogenesis-relat	TSI-1 protein - to	pathogenesis-relat	pathogenesis-relat	STH-2 protein - po	STH-21 protein - p	pathogenesis relat	pathogenesis-relat	hypothetical prote	pathogenesis-relat	pathogenesis-relat	pathogenesis-relat	disease resistance '

## ALIGNMENTS

RESULT 1

S05376

RESULT 1

S05376

Reference number: S05376; MUID: 90005395

A; Accession: S05376; S05376

RESULT 1

European white birch

C:Species: Betula pendula (European white birch)

C:Apacies: Betula pendula (European white birch)

C:Apacies: 31-Mar-1990 #sequence\_revision 31-Mar-1990 #text\_change 04-Feb-2000

C:Accession: S05376; JC4834; B53288

R:BHO J. 8; 1935-1938, 1989

A;Title: The gene coding for the major birch pollen allergen BetvI, is highla, Reference number: S05376; MUID: 90005395

K.; Bito, A.; Valenta, R.; Kraft, D.; Rumpold, H.;

pollen allergen BetvI, is highly homolow

Qy 61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120 	Qy 1 GVENYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60	Query Match 99.0%; Score 810; DB 2; Length 160; Best Local Similarity 98.7%; Pred. No. 1.7e-64; Matches 157; Conservative 0; Mismatches 2; Indels 0; Gaps 0;	F;2-160/Product: major pollen allergen Bet v 1 #status experimental <mat></mat>	A;Note: the source is designated as bethat verrucosa C;Comment: This protein induces IgE synthesis by B cells in a T cell dependent manner C;Superfamily: pathogenesis-related protein	A; Experimental source: pollen A; Note: sequence extracted from NCBI backbone (NCBIP: 68408)	A;Molecule type: protein A;Residues: 2-39 /xX',42-44 <ips> A;Cross-references: PID:g239734; PIDN:AAB20452.1</ips>	A; Accession: B53288 A; Status: preliminary	s) Car b I and oak (Quercus alba) Que a I pollens.  8) Reference number: A53288; MUID:92072607	R; Lpsen, H.; Hansen, O.C.  Mol. Immunol. 28, 1279-1288, 1991	A; MOLECULE TYPE: mRNA A; Residues: 1-160 <kun></kun>	A;Accession: JC4834 A;Status: nucleic acid sequence not shown	A; ritte: Evidence for an alpha herical T cert epicope in the C-terminus of the main A; Reference number: JC4834; MUID:96254050	Biochem. Biophys. Res. Commun. 223, 187-192, 1996	A;Cross-references: EMBL:X15877; NID:g17937; PIDN:CAA33887.1; PID:g17938	A;ACCESSION: SUSSION A;Molecule type: mRNA A;Residues: 1-160 <bres< td=""></bres<>

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J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen,
A;Reference number: A55699; MUID:95155322
A;Accession: D55699
A;Molecule type: mRNA
A;Residues: I-160 <SWO>
A;Rosidues: I-160 <SWO>
A;Cross references: EMBL:X77267; NID:9452733; PIDN:CAA54483.1;
A;Cross references: EMBL:X77267; NID:9452733; PIDN:CAA54483.1;
C;Superfamily: pathogenesis-related protein
                                                                                                                                                                                                                                                                                                                                                                                            RESULT 3
D55599
major pollen allergen Bet v le - European white birch
C;Species: Betula pendula (European white birch)
C;Jate: 01-Dec-1995 #sequence_revision 01-Dec-1995 #to
C;Accession: D55699; S41899
C;Accession: D55699; S41899
R;Swoboda, I; J11ek, A.; Ferreira, F.; Engel, E.; Ho:
ch, M.
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A;Accession: G55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77271; NID:9452739; PIDN:CAA54487.1; PID:94
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
C;Keywords: pollen
C;Keywords: pollen
C;Keywords: pollen
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C; Keywords: pollen
F; 2-160/Product: ma
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if Bet v 1, the major birch
A55699; MUID:95155322
                                                                                                                                                                                 pollen allergen Bet v
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94.3%;
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Pred. No. 2.8e-62;
6; Mismatches 3;
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Pred. No. le-62;
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                                                                                                                                                                                 le #status experimental
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major polle
C;Species:
C;Date: 01-
C;Accession
R;Swoboda,
A;Title: Isoforms of Bet v 1, the major birch A;Reference number: A55699; MUID:95155322
A;Accession: C55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:x77266; NID:g452731;
A;Note: the source is designated as Betula ver A;Note: the source is designated.
                                                                                                                                                                                                                                 RESULT 5
(5.569)
major pollen allergen Bet v 1d/h - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #tex
C;Accession: C55699; S41901; S41898
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A.Accession: E5599
A.Molecule type: mRNA
A.Residues: 1-160 <SWO>
A.Cross-references: EMBL:X77268; NID:9452735; PIDN:CAA54484.1; PID:9452736
A.Cross-references: EMBL:X77268; NID:9452735; PIDN:CAA54484.1; PID:9452736
A.Note: the source is designated as Betula verrucosa
A.Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffman-Sommergruber, submitted to the EMBL Data Library, January 1994
A.Reference number: $41896
A.Recession: $41905
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A;Molecule type: mRNA
A;Residues: 1-160 <SW2>
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                                                                                                                                                                                                                I.; Jilek, A.;
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94.3%;
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  NID:g452731; PIDN:CAA54482.1; as Betula verrucosa ra, F.; Vicente, O.; Hoffman-Sc
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Pred. No. 3.4e-62;
5; Mismatches 4
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Hoffman-Sommergruber,

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Special Contraction

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A;Cross-references: EMBL:X77269; NID:9452727; PIDN:CAA54485.1; PID:94
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1g #status experimental
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch
A;Reference number: A55699; MUID:95155322
A;Accession: F55699
A;Molecule type: mRNA
A;Molecule type: mRNA
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A; Reference number:
A; Accession: S41901
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94.38;
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 European white
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Pred. No. 6.3e-62;
6; Mismatches 4
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Pred. No. 5.1e-62;
4; Mismatches 5
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C;Species: Betula pendula (European white birch C;Species: Betula pendula (European white birch) C;Date: 01-Dec-1995 *sequence_revision 01-Dec-1995 *text_change C;Accession: A57427; S49450 R;Swoboda, I.; Jilek, A.; Ferreira, F.: Fngol Tch, M.
                                                                                          A;Cross-references: EMBL:X82028; NID:g807869; PIDN:CAA57550.1; A;Note: the source is designated as Betula verrucosa C;Superfamily: pathogenesis-related protein C;Keywords: pollen C;Keywords: pollen allergen Bet v lm/n #status armon
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A;Description: Isoforms of BETVI, the major birch pollen allerge A;Reference number: 349450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: EMBL:X77273; NID:g452743; PIDN:CAA54489.1;
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
C;Keywords: pollen
E;2-160/Product: major pollen allergen Bet v 11 #status experin
E;83/Binding site: carbohydrate (Asn) (covalent) #status absent
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A;Title: Isoforms of Bet v 1, the ma
A;Reference number: A55699; MUID:95:
A;Accession: I55699
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C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change
C;Accession: I55699; S41904
                                                                                                                                                                                        A; Molecule type: mRNA
A; Residues: 1-160 < ENG>
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A; Residues: 1-160 <SWO>
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A; Residues: 1-160 <SWO>
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f.Bet v 1, the ma
                  89.9%;
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93.1%;
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                Score 735;
Pred. No. 7
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Pred. No. 2.1e-61;
5; Mismatches 6
Mismatches
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                                  Length 160
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ira, F.
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ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allerge
A;Reference number: A55699; MUID:95155322
A;Accession: H55699
A;Accession: H55699
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Mosidues: 1-160 <SWO>
A;Cross-references: EMBL:X77272; NID:9458478; PIDN:CAA54488.
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
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A55699
major pollen allergen Bet v lb - European white birch
C;Species: Betula pendula (European white birch)
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: A55699; S41401
R;Swoboda, I; Jilek, A; Ferreira, F; Engel, E; Hoffmann-Sommergruber, K
R;Swoboda, I; Jilek, A; Ferreira, F; Engel, E;
                                                                                                                                                                                                                                                                           HS5699 Text. 10
HS5699 Statula (European white birch C;Species: Betula pendula (European white birch)
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 *sequence_revision 01-Dec-1995 *text_change C;Accession: H55699; S41003
C;Accession: H55699; S41003
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: EMBL:X77200; NID:g450884; PI
A;Note: the source is designated as Betula verru
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
C;Keywords: pollen
                                                                                      C; Keywords: pollen F; 2-160/Product: ma
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A;Title: Isoforms of Bet v 1, the major birch
A;Reference number: A55699; MUID:95155322
A;Accession: A55699
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A; Residues: 1-160 <SWO>
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Best Local S
Matches 140
Query Match
Best Local Similarity
Matches 139; Conserv
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             Conservative
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88.1%;
                      88.6%;
                                                                                      allergen
         Score 725; DE Pred. No. 5.5e 9; Mismatches
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Pred. No. 2.4e-57;
B; Mismatches 11;
                                                                                        Bet v
                                                                                                                                                                                                                                                                              Engel, E.; Hoffmann-Sommergruber, K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84; PIDN:CAA54421.1; verrucosa
                                                                                      1k #status
                        DB 2;
.5e-57;
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         Query Match
Best Local Similarity
Matches 134; Conserv
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A; Reference number: S4720
A; Accession: S47250
A; Status: preliminary
A; Molecule type: mRNA
A; Residues: 1-160 < SWO>
A; Cross-references: EMBL: X77599; NII A; Note: the source is designated as C; Superfamily: pathogenesis-related
                                                                                                                             Symoboda, I.; Scheiner, v. submitted to the EMBL Data
                                                                                                                                                                                                                                 RESULT 12
S47250
gene 1-Scl protein -
C; Species: Betula pen
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A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v lc #status
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A; Molecule type: mRNA
A; Residues: 1-160 <SWO>
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                                                                                                                                                                                           C; Accession: $47250
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                                                                                                                                                                                                             protein - European white birch
Betula pendula (European white birch)
- Tan-1995 #sequence_revision 06-Jan-1995
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 NID:g534909; PIDN:CAA54694.1; PID:g534910 as Betula verrucosa ted protein
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Conservative

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85.8%;

Score 702; Pred. No. 5.

DB 2; .8e-55;

Length 160

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submitted to the EMBL Data Library, August 1994
A; Reference number: $47249
A; Accession: $47251
A; Status: preliminary
A; Molecule type: mRNA
A; Residues: 1-159 < SWO>
A; Cross-reference
                                                                                                                                                                                                                                                          Eur. J. Biochem. 212, 355-362, 1993
A;Title: Four recombinant isoforms of Cor a I, the major allergen of hazel pollen, show A;Reference number: S30053; MUID:93185652
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                                                                                                                      A;Gene: Cor a I/6
C;Superfamily: pat
C;Keywords: pollen
                                                                                                                                                                                                                                                                                                                                                  major allergen Cor a I/6 - European hazel
C;Species: Corylus avellana (European hazel)
C;Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999
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S47251
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A; Residues: 1-160 <BRE>
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Matches 115
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GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HTKGNHEMKAEQIKASKEKAEALFRAVESYLLAHSDAYN 159
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                                                                                                                                          pathogenesis-related
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milarity 84.3%;
Conservative
                                    Conservative
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                                                                                                                                                                                            EMBL: x71000; NID: g22689; PIDN: CAA50328.1; PID: g22690
                                                   75.3%;
                                  22;
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                               Score 616; DB 2;
Pred. No. 2.2e-47;
2; Mismatches 22
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Pred. No. 1.3e-54;
9; Mismatches 16
                                                                                                                                         proteir
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Search completed: Job time: 116 sec

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Eur. J. Blochem. 212, 355-362, 1993
A;Title: Four recombinant isoforms of Cor a I,
A;Reference number: $30053; MUID:93185652
A;Accession: $30055.
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                                                                                                                                                                                                                                                                                                    C; Superfamily: pathogenesis-related protein
C; Keywords: pollen
                                                                                                                                                                                                                                                                                                                                                                      A;Molecule type: mRNA
A;Residues: 1-133,'1',135-160 <BRE2>
A;Cross-references: EMBL:X70997; NID:g22683;
                                                                                                                                                                                                                                                                                                                                                                                                                           submitted to the EMBL Data Library, February A; Reference number: S35507 A; Accession: S35507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         major allergen Cor a I/11 - European hazel)
C;Species: Corylus aveilana (European hazel)
C;Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999
C;Accession: S30055; S35507
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A; Residues: 1-160 <BRE1>
                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                 Matches
121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
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                                                                     62 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 121
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72.3%;
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Pred. No. 2.2e-47;
22; Mismatches 22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the major allergen of hazel pollen,
                                                                                                                                                                                                                                                Length 160;
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Perfect score:
Sequence:
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Maximum Match 100%
Listing first 45 summaries
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       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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1: /cgn2_6/ptodata/2,

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3: /cgn2_6/ptodata/2,

4: /cgn2_6/ptodata/2,

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Match
      164575 segs, 16761186 residues
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/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/sCOMB.pep:*
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                                     GenCore version 4.5 (c) 1993 - 2000 Compugen Ltd.
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US-07-847-010-11
US-07-847-010-20
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US-08-315-533A-8
US-08-357-033A-8
US-08-459-059-8
US-08-459-951-8
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US-08-426-627-2
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US-08-669-378-4
US-08-669-378-4
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US-08-669-378-4
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Sequence 23, Appl
Sequence 17, Appl
Sequence 18, Appl
Sequence 18, Appl
Sequence 12, Appl
Sequence 12, Appl
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Sequence 12, Appl
Sequence 13, Appl
Sequence 14, Appl
Sequence 18, Appl
Sequence 19, Appl
Sequence 19, Appl
Sequence 19, Appl
Sequence 20, Appl
Sequence 30, Appl
Sequence 4, Appl
Sequence 4, Appl
Sequence 23, Appl
Sequence 24, Appl
Sequence 27, Appl
Sequence 27, Appl
Sequence 28, Appl
Sequence 29, Appl
Sequence 30, Appl
Sequence 4, Appl
Sequence 6, Appl
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68 8.3 997 2 US-08-387-942C-4 67.5 8.2 769 3 US-09-320-878-12 67 8.2 780 1 US-08-485-621-2 67 8.2 780 2 US-08-973-831-2 67 8.2 780 4 PCT-US96-09530A-2 66.5 8.1 866 2 US-08-386-727-8 66.5 8.1 906 1 US-08-366-727-8 66.5 8.1 906 1 US-08-486-270-2 66.5 8.1 906 1 US-08-486-270-2 66.5 8.1 906 3 US-08-486-270-2 66.5 8.1 310 1 US-08-129-456A-37 66 8.1 310 1 US-09-329-418-8 66 8.1 518 3 US-09-329-418-9 66 8.1 518 3 US-09-329-418-9 66 8.1 1183 2 US-09-329-418-9 66 8.1 1183 2 US-09-329-418-9 67 8.1 1183 2 US-09-329-418-9 68 8.1 1183 2 US-09-329-418-9 69 8.1 1183 2 US-09-329-418-9 60 8.1 1183 2 US-09-329-418-9 61 8.1 1183 2 US-09-329-418-9																	_	
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## ALIGNMENTS

OGY: li E TYPE: TICAL:	•••
Y: linear	•
amino acid	•••
ACTERISTICS:	
INFORMATION FOR SEQ ID NO: 23:	; `
X: (212) 86	
2) 790-90	``
TELECOMMUNICATION INFORMATION:	•• •
BER: 20,280	
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Y/AGENT INFO	••
CLASSIFICATION: 435	٠. ٠
APPLICATION NUMBER: US/07/847,010	
ATA:	٠.
PatentIn	••
OPERATING SYSTEM: PC-DOS/MS-DOS	•••
READABLE FORM:	
ZIP: 10036-	٠.
TRY: U.	•.
: Ne	•••
New York	••
STREET: 1155 Avenue of the Americas	•• •
Edmond.	
OBBESCONDENCE ADDRESS: 23	
INVENTION: Applications Thereo	٠.
NVENTION: A	٠.
APPLICANT: Ferreira, Fatima	•• •
ADDITONNE. School Chaiston	
: Rumpold, F	
Kraft, Di	٠.
Breitenbach	٠.
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: Valenta, Rudolf	٠.
Reikerstorfer	٠.
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Sequence 23, Application US/07847010	Se
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Best Local Similarity 99.4
Matches 158; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOCTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847,010
FILING DATE: 07-JUN-1992
                                                                                                                                                           INFORMATION FOR SEQ ID NO: 3: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IMMEDIATE SOURCE:
LIBRARY: POLLE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                     MOLECULE TYPE: peptide HYPOTHETICAL: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                     TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                       ELLING DATE: OT-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Topper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                            NAME: Jones III, Harry C REGISTRATION NUMBER: 20,
                                                                                          TOPOLOGY: linear
                                                                                                                                     LENGTH:
                                                                                                                                                                                                                               TELEFAX:
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                                                                                                             amino acid
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                                                                                                                                                                                                              (: (212) 869-9741/8864
66141 PENNIE
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1155 Avenue of the Americas
                                                                                                                                     160 amino acids
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Ebner, Christof
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Kraft, Dietrich
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Valenta, Rudolf
Hoffmann - Sommergruber,
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Alder (Alnus sp.)
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Pred. No. 1.8e-83;
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US-07-847-010-14
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Best Local (
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APPLICANT:
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NAME: Jones III, Harry C

NAME:
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REFERENCE/DOCKET NUMBER: 65
TELECOMMUNICATION INFORMATION:
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APPLICATION NUMBER: US/OFFILING DATE: 01-JUN-1992
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: Allergens of Alder Pollen TITLE OF INVENTION: Applications Thereof NUMBER OF SEQUENCES: 23
                                                                                                                                                                                           SEQUENCE CHARACTERISTICS LENGTH: 160 amino acid
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                             ORGANISM: haze IMMEDIATE SOURCE:
                                                                         ORIGINAL SOURCE:
                                                                                            MOLECULE TYPE: peptide HYPOTHETICAL: NO
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STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711
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                                                                                                                                               TOPOLOGY:
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(212) 86
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Scheiner, Otto
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Breitenbach, Michael
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Hoffmann
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         POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
                                                     hazel (Corylus sp.)
                                                                                                                                                  linear
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81.1%;
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Pred. No. 9.5e-69;
l2; Mismatches 18;
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US-07-847-010-17
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Best Local Similarity
                                                                                                                                  TELEPHONE: (212) 790-9
TELEFAX: (212) 869-974
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
                                            MOLECULE TYPE: PO
HYPOTHETICAL: NO
ORIGINAL SOURCE:
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                  IMMEDIATE SOURCE:
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                                                                                                                                                                                                                                           NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,
                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/07/847,010 FILING DATE: 01-JUN-1992 CLASSIFICATION: 435
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10036-2711
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1155 Avenue of the Americas
POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
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SYSTEM: PC-DOS/MS-DOS
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US-07-847-010-11
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                                                                                                                 INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISTICS:
LENGTH: 160 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                 IMMEDIATE SOURCE:
                                            ORIGINAL SOURCE:
                                                        HYPOTHETICAL:
                                                                        TOPOLOGY: li
                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                     ATTORNEY/AGENT
                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                     TELEFAX: (212, TELEFAX: 66141 PENNIE
                               ORGANISM:
                                                                                                                                                                                             TELEPHONE:
                                                                                                                                                                                                                              REGISTRATION NUMBER: 20 REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                         TORNEY/AGENT INFORMATION: NAME: Jones III, Harry C
                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/0 FILING DATE: 01-JUN-1992 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                           TE: New York
NTRY: U.S.A.
10036-2711
                                                                                                    amino acid
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 POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
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                                                                                        linear
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                             hazel (Corylus sp.)
                                                                                                                                                                                (212) 790-9090
212) 869-9741/8864
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73.0%;
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
TITLE OF INVENTION: Applications Thereof
NUMBER OF SEQUENCES: 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
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                                                                                                                                                                                                                                                                                                                                                                                                                    1155 Avenue of the Americas
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6530-010
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RESULT 6
US-07-847-010-20
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                                                                                                                                         TELEFAX: (212) 869-974
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                            MOLECULE TYPE: per HYPOTHETICAL: NO ORIGINAL SOURCE: ORGANISM: hazel
                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 10036-2711
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 65
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
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NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,
                IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
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STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
                                                                                                                                                                                TELEPHONE: (212) />
TELEPHONE: (212) 869-9741/8864
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SOFTWARE: Patentin
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                                                                                           TYPE: amino acid
TOPOLOGY: linear
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                                                                                                                               LENGTH:
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                                                                                                                               160 amino acids
POLLEN FROM ALLERGON AB,
                              hazel (Corylus sp.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ferreira, Fatima
FENTION: Allergens of Alder Pollen and
FENTION: Applications Thereof
COUENCES: 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Breitenbach, Michael
Kraft, Dietrich
                                                                                                                                                                                                                                                                                                                                                                                          IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
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Hoffmann - Somm
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72.3%;
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                                                                                                                                                                                                                                                         20,280
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pred. No. 3.7e-61;
--ches 22;
                                                                                                                                                                                                                                               6530-010
ENGELHOLM, SWEDEN
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US-08-363-010-1
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; APPLICANT: HADWYGER, LEE A.;CHIANG,
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NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO:2:
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Matches
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                                                                                                                                                                                                                                          Sequence 1, Application US/08363010 Patent No. 5512484
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Best Local Similarity
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                                                                                                                                                                                                                         GENERAL INFORMATION:
COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                          TITLE OF INVENTION: CARROT 16 KD PROTEIN, GENE CODING FOR TITLE OF INVENTION: SAID PROTEIN AND PLASMID CONTAINING SINUMBER OF SEQUENCES: 6
                                                                                                                                                                                         APPLICANT: Yamamoto, Mi
APPLICANT: Oheda, Kenji
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA:
                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                       121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
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                                                                         STREET: 8110 Gateric
CITY: Falls Church
                                                                                                                                                                                                                                                                                                                                                                                                                                         61
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: U.S.A. ZIP: 22042
                                                                 STATE:
                                                                                                                                                                                                                                                                                                                                                                                                         61 DGETKYVLHKVELVDDANWANNYSIVGGVGLPDTVEKISFEAKLSAGPNGGSIAKLSVKY 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 158
                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 GVFNFEEEATSIVAPATLHKALVTDADILTPKVI-DAIKSIEIVEGNGGPGTIKKLTFVE 60
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       80;
                                                               Virginia
                                                                                               E: Birch, Stewart, Kolasch & Birch, 8110 Gatehouse Road, Suite 500 East
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 Floppy disk
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Pred. No. 1.3e-59;
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US-08-911-434A-4
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US-08-363-010-1
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                       NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
ADDRESSEE: BIRCH, STEWART, K
STREET: P.O. BOX 747
CITY: FALLS CHURCH
STATE: VIRGINIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: Svensson, Leonard R.
REGISTRATION NUMBER: 30,330
REFERENCE/DOCKET NUMBER: 20-3
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 205-8000
TELEFAX: (703) 205-8050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: (703) 205-8050
TELEX: 248345
INFORMATION FOR SEQ ID NO: 1:
                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PAtentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/911,434A
FILING DATE: 12-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ANTI-SENSE: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                       APPLICANT: TORIKAI, Sa
APPLICANT: OEDA, Kenji
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 154 amino acids
     ATTORNEY/AGENT INFORMATION
                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
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TYPE: amino acid
STRANDEDNESS: sin
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                       CLASSIFICATION:
                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 GSPITSMTVRTDAVNKEALTYDSTVIDGDILLEFIESIETHMVVVPTADGGSITKTTAIF 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/0 FILING DATE: 23-DEC-1994 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 GAQSHSLEITSSVSAEKIFSGIVLDVDTVIPKAAPGAYKSVD-VKGDGGAGTVRIITLPE 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HTKGDAVVPEENIKFADAQNTALFKAIEAYLIAN 154
                                                                                                                                                                            22040
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                                                                                                                                                                                          UNITED STATES OF AMERICA
                                                                                                                                                                                                                                                                                                                                              TORIKAI, Satomi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Daucus carota
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                                                                                                                                                                                                                                                                                                              PLANT PROMOTER AND UTILIZATION THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          33.9%; Score 277.5; DB 1
37.0%; Pred. No. 1.5e-23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/363,010
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                                                                                                                                                                                                                                                            KOLASCH & BIRCH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
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                                          Query Match
Best Local Similarity
Matches 56; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE: U. 20004
                                                                                                                                                                        TOPOLOGY:
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ADDRESSEE:
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; MOLECULE TYPE: protein US-08-199-219-6
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Best Local Similarity
Matches 57; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 6, Application US, Patent No. 6031151
Patent No. 6031151 5698768
GENERAL INFORMATION:
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 154 amino acids
                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 158 amino acids
TYPE: amino acid
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PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: (703)205-8000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: DRAPER, JOHN
TITLE OF INVENTION: CALLUS-SPECIFIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 HTKGDAVVPEENIKFADAQNTALFKAIEAYLIAN 154
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                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/08/
FILING DATE: 01 MARCH 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 GSPITSMTVRTDAVNKEALTYDSTVIDGDILLGFIESIETHLVVVPTADGGSITKTTAIF 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE: Floppy disk
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REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WASHINGTON
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/08199219
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1455.PENNSYLVANIA AVENUE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
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                 28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33.6%; Score 275.5; DB 2; 37.0%; Pred. No. 2.6e-23;
                                                                                                                                                                                                                                                                                                  US/08/199,219
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                                                                                                                                                                                                                          APPLICATION NUMBER: PCT/GB92/01602 FILING DATE: 02 SEPTEMBER 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4:
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   30;
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 Score 236; DB 3; I
Pred. No. 6.9e-19;
0; Mismatches 66;
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                                                                                                                                                                                                                                                                                                                                         Version #1.25 (EPO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROMOTERS
                                  Length 158
   Indels
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Gaps
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                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 38; Conserv
                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1442 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tent No.
                                                                                                               1130 DGSNGIPGPIGPPGPRGRSGETGPVGPPGSPGPPGPPGPPGPGI--DMSAFAGLGQREKG 1187
                                                                                                                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 32,165
REFERENCE/DOCKET NUMBER: UM
TELECOMMUNICATION INFORMATION:
TELEPHONE: (512) 418-3000
TELEFAX: (713) 789-2679
TELEFAX: 79-0924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08
FILING DATE: 30-SEP-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                         1188 PDPMQYM--RADEADSTLRQHDVEV-----DATLKSLNNQIESIRSPDGSRKNPARTCQ 123
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: METHODS AND COMPOSITIONS TITLE OF INVENTION: FOR STIMULATING BONE CELLS NUMBER OF SEQUENCES: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
113 ILKISNKYHTKGDHEVKAEQ-----
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ZIP: 77210
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                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                     25 DGDNLFP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKYHT 122
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                                                                           --PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGG------S 112
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                                                                                                                                                                                                                                                                                                                                                    amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Texas
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P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Roessler, Blake J.
Goldstein, Steven A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lin, Wushan
                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                  SS: single
linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bonadio, Jeffrey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-SEP-1994
                                                                                                                                                   -----KVAPQAISSVENIEGNGGPGTIKKISFPEGL----- 62
                                                                                                                                                                                                        24.18;
                                                                                                                                                                                                                           9.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US 08/199,780
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      UMIC:008
                                                                                                                                                                                                        Score 78; DB 2; Pred. No. 7.8;
       --VKASKEMGET 142
                                                                                                                                                                                         Mismatches
                                                                                                                                                                                         52;
                                                                                                                                                                                                                             Length 1442;
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                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTEX:
ZIP: 77210
ZIP: 77210
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Flo
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                                                                                                                                                                                                                                                                          1130 DGSNGIPGPIGPPGPRGRSGETGPVGPPGSPGPPGPPGPPGPGI--DMSAFAGLGQREKG 1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
TELEPHONE: (512) 418-3000
TELEFAX: (713) 789-2679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0
FILING DATE: 30-SEP-1994
1240 DLKLCHPEWKSGDYWIDPNQGCTLDAMKVFCNMETGET 1277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION: NAME: Parker, David L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                 1188 PDPMQYM--RADEADSTLRQHDVEV-----DATLKSLNNQIESIRSPDGSRKNPARTCQ 1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE:
                                                                                                                                                                                                                                                                                                                                             25 DGDNLFP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US 08/199,780 FILING DATE: 18-FEB-1994 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Parker, David L. REGISTRATION NUMBER: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
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                                                                                                                                                                            --PFKYVKDRYDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGG------S 112
                                                               ILKISNKYHTKGDHEVKAEQ-----
                                                                                                                                                                                                                                                                                                                                                                                                            l Similarity
38; Conserv
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24.1%;
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                                                                                                                                                                                                                                                                                                                                         ----KVAPQAISSVENIEGNGGPGTIKKISFPEGL----
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                                                                      --VKASKEMGET 142
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RESULT 13 US-08-357-533A-8

Sequence 8, Application

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                                                                                                             US-08-459-009-8
                                                                                                                            RESULT
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                                           Sequence 8, Application US/08459009
Patent No. 5861479
GENERAL INFORMATION:
APPLICANT: JIN, DONALD F
                                                                                                                                                                                                                                                                                                                                                                    Matches
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Best Local :
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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NAME: KELLY, ROBIN D
REGISTRATION NUMBER: 34,637
REFERENCE/DOCKET NUMBER: CR
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MEDIUM TYPE: Floppy
                               APPLICANT:
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   APPLICANT:
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                                                                                                                                                                                                                                       260 MPNNMKDMLDVLEETS------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/357,533A FILING DATE: 16-DEC-1994 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PPLICANT: KUBERASAMPATH, THANGAVEL PPLICANT: SMART, JOHN E TILE OF INVENTION: NOVEL MORPHOGEN
                                                                                                                                                                                                                                                                      63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                    8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENIEGNGGPGTIKKISFPEGL 62
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
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                                                                                                                                                                                                         YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
                                                                                                                                                                                                                                                                                                    ETENNVPMVTM-----GDGAGSSVPEVAPIEQQGSTMSTSAGN--
                                                                                                                                                                         ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344
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39; Conserv
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JIN, DONALD F
OPPERMANN, HERMANN
KUBERASAMPATH, THANC
SMART, JOHN E
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                THANGAVEL
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                                                                                                                                                     Sequence 8, Application US/08459951 Patent No. 6093547
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                                                                                                                                        GENERAL INFORMATION:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: (508)-435-9001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/357,533
FILING DATE: 16-DEC-1994
ATTORNEY/AGENT INFORMATION:
                NUMBER OF SEQUENCES: 1
                                                                                                APPLICANT: JIN, DONALD F
APPLICANT: OPPERMANN, HERMANN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
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                                                   TITLE OF INVENTION:
                                                                 APPLICANT: KUBERASAMPATH, APPLICANT: SMART, JOHN E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: protein
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                                                                                                                                                                                                                                                               309 --- RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH
                                                                                                                                                                                                                                                                                                120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
                                                                                                                                                                                                                                                                                                                                                                                                      216 ETENNVPMVTM-----GDGAGSSVPEVAPIEQQGSTMSTSAGN-----SFPPGI 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: Protein LOCATION: 1..669 OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES ADDRESSEE: INC
                                                                                                                                                                                                                                                                                                                                                                    63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 435
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: KELLY, ROBIN D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                       8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENIEGNGGPGTIKKISFPEGL 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ENGTH:
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PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES
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PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/357,533

FILING DATE: 16-DEC-1994

ATTORNEY/AGENT INFORMATION:

NAME: KELLY, ROBIN D

REGISTRATION NUMBER: 34,637

REFERENCE/DOCKET NUMBER: CRP-073FW

TELECHONE: (508) + 435-0901

TELEPHONE: (508) + 435-0992

INFORMATION FOR SEQ-ID NO: 8:

SEQUENCE CHARACTERISTICS:
LENGTH: 669 amino acids

TYPE: amino acid

STRANDEDNESS: single

TOPOLOGY: linear

TOPOLOGY: linear
Search completed: December 11, 2000, 09:50:02 Job time: 499 sec
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MEDIUM TYPE: Floppy disk
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p15494; 096369; 01-APR-1990 (Rel. 14, Created) 01-APR-1990 (Rel. 14, Last sequence update) 15-UUL-1998 (Rel. 36, Last annotation update) MAJOR POLLEN ALLERGEN BET V 1-A (BET V 1-A). BETVIA OR BETVI. BETVIA OR BETVI. Betula verrucosa (White birch) (Betula pendula). Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta Magnolinbyta; eurosids I:	STANDARD; P	34 312.5 38.2 153 1 RNS2_PANG 35 312 38.1 155 1 PR13_PETC 36 310.5 37.9 154 1 MPAG_APIG 37 301 36.8 157 1 RAP_TANOF 38 278.5 34.0 154 1 DAUL_DAUC 39 236 28.8 158 1 PR1_ASPOF 40 80.5 9.6 956 1 CB31_YEAS; 41 80.5 9.6 956 1 CB31_YEAS; 42 79 9.6 387 1 YRS8_CAEE 43 79 9.6 726 1 CM14_YEAS; 44 78 9.5 1459 1 CA12_MOUS 45 77.5 9.5 889 1 NODY_BRAJ
P15494; 096369; 01-APR-1990 (Rel. 14, Created) 01-APR-1990 (Rel. 14, Last sequence update) 15-JUL-1998 (Rel. 36, Last annotation update) 15-JUL-1998 (Rel. 36, Last annotation update) MAJOR POLLEN ALLERGEN BET V 1-A (BET V I-A). BETVIA OR BETVI: BETVIA OR BETVI: Betvia verrucosa (White birch) (Betula pendula). Betvia viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Betvia verrucosa (White birch) (Betula pendula).	ALIGNMENTS PRT; 159 AA.	RNS2_PANGI P80890 panax ginse PR13_PETCR P19418 petroselinu MPAG_APIGR RAP_TAROF OA49065 taraxacum OA411_DAUCA OD4716 dasparagus PR1_ASPOF ORAT ORAT ORAT ORAT ORAT ORAT ORAT ORAT

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MEDLINE; 91317572.  Elsayed S., Vik H.;  Elsayed S., Vik H.;  "purification and N-terminal amino acid sequence of two birch pollen isoallergens (Bet v I and Bet v II).";  Int. Arch. Allergy Appl. Immunol. 93:378-384(1990).  X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS), AND STRUCTURE BY NMR. MEDLINE; 97102431.  Gajhede M., Osmank P., Poulsen F.M., Ipsen H., Larsen J.N., van Neerven R.J.J., Schou C., Loewenstein H., Spangfort M.D.;  "X-ray and NMR structure of Bet v 1, the origin of birch pollen allergy.";  Nat. Struct. Biol. 3:1040-1045(1996).  UISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH AMERICA AND USSR.  SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED		ulla vei aryota, noliopi ales; I UENCE 1 SUE-POI LINE; S Liteneda pold H pold H peld H peld H peld H peld H	LT 1 _BETVE STANDARD; PRT; 159 AA. BY1A_BETVE STANDARD; PRT; 159 AA. BY1A_BETVE STANDARD; PRT; 159 AA. D1.4PR.1990 (Rel. 14, Created) O1-APR.1990 (Rel. 14, Last sequence update) O1-JUL-1998 (Rel. 36, Last annotation update) MAJOR POLLEN ALLERGEN BET V 1-A (BET V I-A). RETVIA OR RETVI

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EMBL; Z80098; CAB02153.1; -.
EMBL; Z80099; CAB02154.1; -.
EMBL; Z800104; CAB02159.1; -.
PIR; S05376; S05376.
PDB; 1BTV; 17-SEP-97.
PDB; 1BV; 17-SEP-97.
INTERPRO; 1PR000916; -.
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P43183;
01-NOV-1995
01-NOV-1997
          MEDLINE; 95155322.

MEDLINE; 95155322.

Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergrube Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E., Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;

"Isoforms of Bet v 1, the major birch pollen allergen, analyzed liquid chromatography, mass spectrometry, and cDNA cloning.";

J. Biol. Chem. 270:3607-2613(1995).

-!- SUBCELLULAR LOCATION: CYTOPLASMIC.

-!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, AMERICA AND USSR.

-!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELA
                                                                                                                                                                                           Betula verrucosa (White birch) (Betula pendula
Betula verrucosa (White birch) (Betula pendula
Eukaryota; Viridiplantae; Embryophyta; Trachec
Magnoliophyta; eudicotyledons; core eudicots;
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FFAM; PF00407; Bet_v_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
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                                                                                                                                                TISSUE-POLLEN
                                                                                                                                                         SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                   BETV1J.
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(Rel. 35, Last ann
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                                     I ALLERGIC REACTIONS IN EUROPE, NORTH
                                                                                                                                                          SEQUENCE.
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               PATHOGENESIS - RELATED
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Best Local
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P43178;
01-NOV-1995 (Rel. 32, C
01-NOV-1997 (Rel. 32, L
01-NOV-1997 (Rel. 35, L
                                                                                                                          This SWI
between
                                                                                                                                                                                                                                                              Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E., Vicente O., Heberle-Bors E., Aborn H., Breitenbach M.; Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography, mass spectrometry, and cDNA cloning."; J. Biol. Chem. 270:2607-2613(1995).

1- SUBCELLULAR LOCATION: CYTOPLASMIC.

1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Magnoliophyta; eudico
Fagales; Betulaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pathogenesis-related protein; Allergen; Multigene family.
INIT_MET 0. 0
SEQUENCE 159 AA; 17408 MW; D2AC26E9E7710A8D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INTERPRO; IPR000916; -.
PFAM; PF00407; Bet v_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI;
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HSSP; P15494; 1BTV.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.,
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                                                                                                                                                                                                                     AMERICA AND USSR. SIMILARITY: BELONGS
                                                                                                                                                                                                   PROTEIN.
                                                                                                                       SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the EM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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BET V 1-E (BET V I-E).
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Pred. No. 8.8e
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Best Local S
Matches 151
EMBL; X77267; CAA54483.1; -.
HSSP; P15494; 1BTV.
INTERPRO; IPRO00916; -.
PFAM; PF00407; Bet_v_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOCENESIS_BETVI; 1.
PATHOGENESIS-related protein; Allergen; Mul
INIT_MET 0
SEQUENCE 159 AA; 17316 MW; 3E752543EDD1
                                                                                                                                                                                                                                                                                        MEDLINE; 95155322.

MEDLINE; 95155322.

MEDLINE; 95155322.

Svoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergrube Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E., Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;

"Isoforms of Bet v 1, the major birch pollen allergen, analyzed liquid chromatography, mass spectrometry, and cDNA cloning.";
J. Biol. COHEM. 270:2607-2613(1995).

-I- SUBCELLULAR LOCATION: CYTOPLASMIC.

-I- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BV1F_BETVE P43179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
MAJOR POLLEN ALLERGEN BET V 1-F/I (BET V I-F/I).
                                                                        EMBL; X77268; CAA54484.1;
EMBL; X77274; CAA54490.1;
HSSP; P15494; 1BTV.
                                                                                                                                   use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restitute the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Betula verrucosa (White birch) (Betula pendula).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
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SIMILARITY: BELONGS TO THE BETVI FAMILY
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                     PATHOGENESIS_BETVI;
                                                                                                                                                                                                                                                                                                                                                                                                                                            AND PARTIAL SEQUENCE
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No. 2
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.4e-61;
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RESULT 5
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Best Local's
Matches 151
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01-NOV-1995
01-NOV-1997
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P43177;
                                                                                                                                                                       EMBL; X77266;
EMBL; X77270;
HSSP; P15494;
                                                                                                                                                                                                                                                                            use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                       INTERPRO: IPR009916; -.
PFAM: PF00407; Bet_v_I; 1.
PRINTS: PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI;
PAthogenesis related protein; Allerger
INIT_MET 0 0
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Betula verrucosa (White birch) (Betula pendula).

Eukaryota, Viridiplantae; Embryophyta; Tracheophyta; Spagnoliophyta; eudicotyledons; core eudicots; Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1995 (Rel. 32, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
MAJOR POLLEN ALLERGEN BET V 1-D/H (BET V I-D/H).
                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entrepean Bioinformatics Institute. There are no restructed by non-profit institutions as long as its content use by non-profit institutions as long as its content
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AMERICA AND USSR.
SIMILARITY: BELONGS TO THE BETVI FAMILY
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(Rel: 32, Last seq
(Rel. 35, Last ann
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CAA54486.1;
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No. 2.9e-61
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Query Match Best Local Similarity

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HSSP; P15494; 1BTV.
INTERPRO; IPR000916; -.
PEAM; PF00407; Bet_V_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI;
PROSITE; PS00451; PATHOGENESIS_BETVI;
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01-NOV-1995 (Rel. 32, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
MAJOR POLLEN ALLERGEN BET V 1-G (BET V I-G).
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Eukaryota; Viridiplantae;
f 62
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SIMILARITY: BELONGS TO THE BETVI FAMILY OF
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Pred. No. 5.2e
6; Mismatches
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Tracheophyta;
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MEDILINE; 9515332.

Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber Scheiner O., Kruft D., Breiteneder H., Pittenauer E., Schmid E., Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;

"Isoforms of Bet v 1, the major birch pollen allergen, analyzed by iquid chromatography, mass spectrometry, and cDNA cloning.";

J. Biol. Chem. 270:2607-2613(1995).

-!- SUBCELLULAR LOCATION: CYTOPLASMIC.

-!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and foentities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN the European Bioinformatics Institute. There are no restricted the succession of the successio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PFAM; PF00407; Bet_v_I;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; X77273; CAA54489.1;
HSSP; P15494; 1BTV.
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Magnoliophyta; eudicotyledons;
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01-NOV-1995 (Rel.
01-NOV-1997 (Rel.
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PROSITE; PS00451; PATHOGENESIS_BETYI; 1.
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Embryophyta; Tracheophyta; Spermatophyta;
ions; core eudicots; Rosidae; eurosids I;
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Pred. No. 1.7e-60;
5; Mismatches 5
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P45431;
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MAJOR POLLEN
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Betula verrucosa (White birch) (Betula pendula).

Betula verrucosa (White birch) (Betula pendula).

Bukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophy

Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids

Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids

Magnoliophyta; Betulaceae; Betula.
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EMBL; X82028; CAA57550.1; -.
HSSP; P15494; 1BTV.
INTERPRO; IPR000916; -.
PFAM; PF00407; Bet_v_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
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Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergrube Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E., Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.; "Isoforms of Bet v 1, the major birch pollen allergen, analyzed liquid chromatography, mass spectrometry, and cDNA cloning."; J. Biol. Chem. 270:2607-2613(1995).
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Pred. No. 4.7e-57;
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                                                                                                                           P43184;
01-NOV-1995
01-NOV-1995
01-NOV-1997
                             Fagales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergrube Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E., Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.; "Isoforms of Bet v 1, the major birch pollen allergen, analyzed liquid chromatography, mass spectrometry, and cDNA cloning."; J. Biol. Chem. 270:2607-2613(1995).

-i- SUBCELLGUAR LOCATION: CYTOPLASMIC.

-i- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE,
                                                    Betula verrucosa (White birch)
Eukaryota; Viridiplantae; Embr.
Magnoliophyta; eudicotyledons;
                                                                                                                                                                                                    BETVE
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 TISSUE-POLLEN;
             SEQUENCE FROM
                                                                                                  BETV1K.
                                                                                                               MAJOR POLLEN
                                                                                                                                                                                   BV1K_BETVE
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PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
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Swoboda I., Jilek A., Ferreira
Scheiner O., Kraft D., Breiten
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Betula verrucosa (White birch) (Betula pendula).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledoms; core eudicots; Rosidae; eurosids I;
Fagales; Betulaceae; Betula.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; X77200; CAA54421.1;
HSSP; P15494; 1BTV.
INTERPRO; IPR000916; -.
PFAM; PF00407; Bet_v_I; 1.
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nes 141; Conserv
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                                         Betulaceae;
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(Rel. 32, Last sequence update)
(Rel. 35, Last annotation update)
N ALLERGEN BET V 1-K (BET V I-K).
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             N.A.,
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                                                                                   (White birch)
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                                         Betula.
             PARTIAL
                                                     irch) (Betüla pendula).
Embryophyta; Tracheophyta; Spermatophy
dons; core eudicots; Rosidae; eurosids
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: Pred. No. 1.6e
8; Mismatches
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             SEQUENCE
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L.6e-56;
nes 10;
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BV1C_BETVE
P43176;
01-NOV-1995
01-NOV-1995
01-NOV-1997
                    MEDLINE; 95155322.

Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergrube Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E., Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;

"Isoforms of Bet v 1, the major birch pollen allergen, analyzed liquid chromatography, mass spectrometry, and cDNA cloning.";

J. Biol. Chem. 270:2607-2613(1995).
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-i. SUBCELLULAR LOCATION: CYTOPLASMIC.
                                                                                                                                                                                                                                                                                             Betula verrucosa (White birch) (Betula pendula).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
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PFAM; PF00407; Bet_v_; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
                                                                                                                                                                                                  TISSUE-POLLEN
                                                                                                                                                                                                                       SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                         Fagales;
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INIT_MET 0 0
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HSSP; P15494;
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     SUBCELLULAR LOCATION: CYTOPLASMIC
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140; Conserv
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(Rel. 32, Last sequence up)
(Rel. 35, Last annotation)
N ALLERGEN BET V 1-C (BET V)
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88.1%;
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Pred. No. 3
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3.4e-56;
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Best Local
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J. Allergy Cli
-!- DISEASE: F
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01-FEB-1995
01-FEB-1995
01-NOV-1997
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PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS BETVI; 1.
PATHOGENESIS related protein; Allergen; 1
INIT_MET 0 0
SEQUENCE 159 AA; 17383 MW; AAEFA445A
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Ol-FEB-1995 (Rel. 31, Last sequence update)
Ol-NOV-1997 (Rel. 35, Last annotation updat
MAJOR POLLEN ALLERGEN ALU G I (ALN G I).
Alnus glutinosa (Alder).
Eukaryota; Viridiplantae: Embryophyta; Trac
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the Euro
                        This SWISS-PROT entry is copyright. It is between the Swiss Institute of Bioinformatics Institute. The European Bioinformatics Institute. The swiss by non-profit institutions as long
                                                                                                                                              "Complementary DNA cloning and expression in Esche I, the major allergen in pollen of alder (Alnus J. Allergy Clin. Immunol. 90:909-917(1992).

-I- DISBASE: A CAUSE OF TYPE I ALLERGIC REACTIONS AMERICA AND USSR.

-I- SIMILARITY: BELONGS TO THE BETYI FAMILY OF PAT
                                                                                                                                                                                                                                                                               Breiteneder H., Ferreira F., Reike Valenta R., Hoffmann-Sommergruber Kraft D., Scheiner O.;
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                                                                                                                                                                                                                                                                                                                                                                       TISSUE=POLLEN;
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Bioinformatics and the EMBL outstat
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(NTERPRO; IPRO00916; ...)

PRAM; PRO0407; Bet_v_I; 1.

PRINTS; PRO0634; BETALLERGEN.

PROSITE; PS00451; PATHOGENESIS_BETVI; 1.

PROSITE; PS00451; PATHOGENESIS_BETVI; 1.

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Therefore, Pathogenesis-related protein; Multigene family BY SIMILARITY.

Therefore, Pathogenesis-related protein; Multigene family BY SIMILARITY.
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"PCR based cloning and sequencing of isogenes encoding pollen major allergen Car b I from Carpinus betulus, hc Mol. Immunol. 29:703-711(1992).

-i- DISEASE: A CAGSE OF TYPE I ALLERGIC REACTIONS IN EU
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HSSP;
                                                                                                                                                                                               EMBL; X66933; CAA47367.1;
HSSP; P15494; 1BTV.
INTERPRO; IPRO00916; -.
                                                                                                                                                                                                                                                                                            use by non-profit institutions as long modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
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Eukaryota; Viridiplantae; E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-FEB-1995 (Rel. 31, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
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GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Query Match Best Local Sin Matches 116;

Similarity

75.6%; 73.0%;

Score 619; DB Pred. No. 1.2e 21; Mismatches

DB 1, 1.2e-46; 22;

Length 159, Indels

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Gaps

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Conservative

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RESULT 14
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Best Local
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                                                           Allergen;
INIT_MET
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                                                                                                                                                                                                                                                                                                                                                     Nedergaard Larsen J., Stroeman P., Ipsen H.;

"PCR based cloning and sequencing of isogenes encoding the tre
pollen major allergen Car b I from Carpinus betulus, hornbeam.

Mol. Immunol. 29:703-711(1992).

-I- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, N

AMERICA AND USSR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Carpinus betulus:(Hornbeam).
Eukaryota; Viridiplantae; Embry
Magnoliophyta; eudicotyledons;
Fagales; Betulaceae; Carpinus.
                                                                                                                                         EMBL; X66932; CAA47366.1;
EMBL; X66918; CAA47357.1;
HSSP; P15494; 1BTV
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01-FEB-1995 (Rel. 31, Last sequence up
01-NOV-1997 (Rel. 35, Last annotation
MAJOR POLLEN ALLERGEN CAR B 1, ISOFORN
                                                                                  PFAM; PF00407; Bet_v_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
                                                                                                                                                                                              entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                               INTERPRO; IPRO00916; -.
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-!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENES
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Pathogenesis related protein; Mul

0 0 BY SIMILARITY.

0 V -> A (IN ISO

62 62 I -> S (IN ISO

132 132 K -> E (IN ISO

159 AA; 17271 MW; 21DCD17A3885
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RESULT 15

ID MANA_CORAV STANDARD; PRI; 159 AA.

AC 008407;
DT 01.0CT 1994 (Rel. 3), Created)
DT 01.FEB-1995 (Rel. 31, Last sequence update)
DT 01.FEB-1995 (Rel. 35, Last sequence update)
DT 01.FEB-1995 (Rel. 31, Last sequence update)
DT 01.FEB-1995 (Rel. 35, Last sequence update)
CC Fagales; Betulaceae; COrylus.

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Query Match
Best Local Similarity
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Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
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Copyright (c) 1993 - 2000 Compugen Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

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467.2	467.2	467.4	468.8	468.8	468.8	468.8	470.4	470.4	473.6	480	Score	
97.3	97.3	97.4	97.7	97.7	97.7	97.7	98.0	98.0	98.7	100.0	Match	0000
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BVZ80099	BVAJ2108	177099	BVZ80098	BVGC31	BVGC11	BVAJ2107	BVBETV1	177098	BVZ80106	BVZ80104	ID	
Z80099 B.verrucosa	AJ002108 Betula ve	177099 Sequence 22	Z80098 B.verrucosa	Z72432 B.verrucosa	Z72429 B.verrucosa	AJ002107 Betula ve	X15877 Birch mRNA	177098 Sequence 21	280106 B.verrucosa	z80104 B.verrucosa	Description	
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European white birch.
Betula pendula
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1 (bases 1 to 483)
                                                                                                                                                            Submitted (06-SEP-1996) Larsen Alle 10-12, Horsholm, DK-2970,
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Direct Submission
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PCR based cloning
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/protein_id="CAB02159.1"
/db_xref="GI:1542869"
/db_xref="SWISS-PROT:P15494"
                                                                       /tissue_type="pollen obtained
/clone="2227"
/note="obtained by PCR using o
                                                                                                           /organism="Betula pendula"
/db_xref="taxon:3505"
                                                                                                                                               Location/Qualifiers
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BVE6911
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AJ006911 Betula pe
Z80102 B. verrucosa
AF12483 Betula ve
AJ006907 Betula ve
Z80100 B. verrucosa
AJ002110 Betula ve
AF124837 Betula pe
X77266 B. verrucosa
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AJ006919 Betula ve
AJ006914 Betula ve
AJ006919 Betula ve
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                                                                                                                                            Betula pendula

Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;

Rosidae; Fagales; Betulaceae; Betula.

1 (bases 1 to 483)
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Z80106
Z80106.1 GI
                                                             Submitted (06-SEP-1996)
Alle 10-12, Horsholm, DI
                                                                                                               PCR based cloning and pollen major allergen Unpublished
                                                                                  Larsen, J.N.
Direct Submission
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European white birch.
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IEGNGGPGTIKKISFPEGLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNE
IKIVATPDGGSILKISNKYHTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN
                                                 1 (06-SEP-1996) Larsen J.N.,
2, Horsholm, DK-2970, Denman
Location/Qualifiers
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                                                and Scheiner, O. Allergens of alder pollen and applications Patent: US 5693495-A 21 02-DEC-1997;
                                                                              1 (bases 1 to 672)
Breiteneder, H., Valenta, R.,
                                                                                                     Unclassified
                                                                                                              Unknown
                                                                                                                          Unknown
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/protein_id="CAB02161.1"
/db_xref="GI:1542873"
/db_xref="SPTREMBL:Q96371"
                                      Location/Qualifiers
        organism="unknown"
130 c 158 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="mGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
IEGNGGPGTIKKISFPEGFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNE
IKIVATPDGGSILKISNKYHTKGDHEVKAEQVKASKEMRETLLRAVESYLLAHSDAYN
                                                                                                                                            GI:3013252
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Birch mRNA for pollo
X15877
X15877.1 GI:17937
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The gene coding for the major birch pollen allergen Betv1, is highly homologous to a pea disease resistance response gene EMBO J. 8 (7), 1935-1938 (1989)
                                                                                                                                                                                                                                                                                                         Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; euphyllophytes; Spermatophyta; Magnollophyta; eudicotyledons; Rosidae; Fagales; Betulaceae; Betula.

1 (bases 1 to 691)
                                                                                                                                                                                                                                                                                                                                                                                  allergen; BetvI gene;
European white birch.
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                                                                                                                                                                                                                                 8 (7),
                                                                                                    /tissue_type="pollen"
/clone_lib="lambda gt:
49. .531
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                                                                       /note="BetvI allergen (AA
/codon_start=1
                                                                                                                                         /organism="Betula pendula"
/db_xref="taxon:3505"
/ticano trano"
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r pollen
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Pred. No. 1.2e-123;
0; Mismatches 6;
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AJ002107.1
            Direct Submission
Submitted (17-0CT-1997) Friedl-Hajek R., Institute of General and
Experimental Pathology, University of Vienna, Waehringer Guertel
18-20, A-1090 Vienna, AUSTRIA
                                                                                     Friedl-Hajek,R., Radauer,C., O'Riordain,G.,
Hoffmann-Sommergruber,K., Leberl,K., Scheiner,O.
How Bet v 1 isoforms including a naturally occurr
of the protein derived from Austrian birch pollen
Mol. Immunol. 36 (10), 639-645 (1999)
99437514
                                                                                                                                                             AJ002107.1 GI:2564221
Betv1 gene; pollen allergen.
European white birch.
Betula pendula
Betula pendula
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
euphyllophytes; Spermatophyta; Magnollophyta; eudicotyledons; core
eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula.

1 (bases I to 483)
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Betula verrucosa mRNA
at12).
                                                                Friedl-Hajek,R.
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Pred. No. 1.2e-123;
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euphyllophytes; Spermatophyta;
Rosidae; Fagales; Betulaceae; I
                     Betula pendula
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
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European white birch.
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/clone="atl2"
/tissue_type="pollen"
/dev_stage="mature"
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/translation="mgvfnyetettsvipaarlfkafildgdnlfpkvapqaissven
iegnogpgtikkisppegfppkyvkdbydevdhtnfkvnysvieggpmdtlekisne
ikivatpdggsilkisnkyhtkgdhevkaeqvkaskemgetllravesyllahsdayn
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/db_xref="GI:2564222"
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Direct Submission
Submitted (29-APR-1996) Hoffmann-Sommergruber K., University
Submitted (29-APR-1996) Hoffmann-Sommergruber K., University
Submitted (29-APR-1996) Hoffmann-Sommergruber K., University
Submission
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Perreira, F., Scheiner, O. and Breiteneder, H.
Genomic characterization of members of the Bet v 1 family: ge
coding for allergens and pathogenesis-related proteins share
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vienna, Vienna, Austria, Gen.
18-20, Vienna, Austria, A-1090
2 (bases 1 to 483)
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/protein_id="CAA96538.1"
/db_xref="GI:1321712"
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/db_xref="taxon:3505"
/clone="BVGC11"
/tissue_type="leaves"
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cacaccaaaggtgaccatgaggtgaaggcaggcaggttaaggcaagtaaagaaatgggc
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major allergen.
European white birch.
Betula pendula
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Gene 197 (
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Perreira,F., Scheiner,O. and Breiteneder,H.
Genomic characterization of members of the Bet v
coding for allergens and pathogenesis-related pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Vienna, Vienna, Austria, Gen. (18-20, Vienna, Austria, A-1090 2 (bases 1 to 483)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (29-APR-1996) Hoffmann-Sommergruber K., University of Vienna, Vienna, Austria, Gen. & Exp. Pathology, Waehringer Guertel
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                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="Sptrembl:Q42499"
/translation="mGVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
IEGNGGPGTIKKISFPEGFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNE
IKIVATPDGGSILKISNKYHTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="major allergen
/protein_id="CAA96541.1"
/db_xref="GI:1321720"
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/db_xref="taxon:3505"
/clone="BVGC31"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /tissue_type="Mature Leaves"
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                                            GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA
                                                                                        gttgaaaacattgaaggaaatggaagggcctggaaccattaagaagatcagctttcccgaa
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Submitted (06-SEP-1996) Larsen J.N., AI
Alle 10-12, Horsholm, DK-2970, Denmark
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Z80098.1 GI:1542856
Betv1; pollen allergen.
European white birch.
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B.verrucosa mRNA 1
Z80098
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                                                                                                                                                                                                                                                                                                /product="pollen allergen Bet v 1"
/protein_id="CAB02153.1"
/db_xref="GI:1542857"
/db_xref="SWISS-PROT:P15494"
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IKIVATPDGGSILKISNKYHTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN
                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
/product="pol1
                                                                                                                                                                                                                                                                                                                                                                                                   /note="obtained by PCR using cDNA as
                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="pollen obtained/clone="224"
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/db_xref="taxon:3505"
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                     gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac
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                                                                                                  GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC
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1 (bases 1 to 4)

Breiteneder, H.,
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Sequence
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Allergens of alder pollen and applications
Patent: US 5693495-A 22 02-DEC-1997;
Location/Qualifiers
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                                          gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
                            GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA
                                                                                                                                                                                                                                                  al Similarity
472; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            l (bases 1 to 483)

1 (bases 1 to 483)

Friedl-Hajek, R., Radauer, C., O'Riordain, G.,

Hoffmann-Sommergruber, K., Leberl, K., Scheiner, O. and

New Bet v 1 isoforms including a naturally occurring

New Bet v 1 isoforms including a naturally occurring
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula
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Betvl gene; pollen allergen.
European white birch.
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Betv1 gene;
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/translation="MGVFNYETETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVEN
IEGNGGPGTIKKISSPEGFPFKYVKDRVDEVDHTNFKXNYSVIEGGPIGDTLEKISNE
                                                                                                                                                                                                                                                                                                                                                                                                                /product="pollen allergen Betv1"
/protein_id="CAA05188.1"
/db_xref="GI:2564224"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Betula pendula"
/db_xref="taxon:3505"
/clone="at15"
                                                                                                                                                                                                                                                                                                                                                            IKIVATPDGGSILKISNKYHTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="pollen"
/dev_stage="mature"
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                                         ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag
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Submitted (06-SEP-1996) Larsen
Alle 10-12, Horsholm, DK-2970,
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len major allergen Bet v 1 from Betula verrucosa, white birch
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/product="pollen allergen Bet
/protein_id="cAB02154.1"
/db_xref="GI:1542859";p15494"
/db_xref="SWISS-PROT:p15494"
                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Betula pendula"
/db_xref="taxon:3505"
/tissue_type="pollen obtained from Allergon,
/clone="2230"
                                                                                                                                                                                                                                                                   IKIVATPDGGSILKISNKYHTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN
                                                                                                                                                                                                                                                                              /translation="MGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
TEGNGGPGTIKKISFÞEGFÞFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNE
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m mKNA} PLN 12-SEP-1996 pollen allergen Betv1 (clone 2230).
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European white birch.
Betula pendula
                                                                                                                                                                                                                                                                                                                                                                            Mol. Immu
99437514
                                                                                                                                                                                                                                                                                    2 (bases 1 to 483)
Fried1-Hajek, R.
Direct Submission
Submitted (17-OCT-1997) Fried1-Hajek R., Institute of General and Experimental Pathology, University of Vienna, Waehringer Guertel 18-20, A-1090 Vienna, AUSTRIA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                       Hoffmann-Sommergruber, K., Leberl, K., Scheiner, O. New Bet v 1 isoforms including a naturally occurr of the protein derived from Austrian birch pollen Mol. Immunol. 36 (10), 639-645 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; euphyllophytes; Spermatophyta; Magnollophyta; eudicotyledons; core eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula 1 (bases 1 to 483)
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AJ002109.1
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                       148
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                       þ
                                              /translation="MGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
IEGNGGPGTIKKISFPEGFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNE
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                                                                                                                                                   /note-"isoform at22"
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                                                                                                                                                              /gene="Betv1"
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                                                                                    db_xref="SPTREMBL:024642"
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                        104
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Bet v 1 (Bet v 1
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Best Local :
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AJ006906.1 GI:4006948
Betv1 gene; pollen allergen.
European white birch.
Betula pendula
                                                                                                                                                                                                                                                                                                                                        Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; euphyllophytes; Spermatophyta; Magnollophyta; eudicotyledons; core eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula.

1 (bases 1 to 483)
1 (bases 1, Radauer, C., O'Riordain, G., and Braitenedar H
                                                                                                                                                                                          Direct Submission
Submitted (10-JUN-1998) Friedl-Hajek R.,
                                                                                                                                                              Experimental Pathology, University 18-20, A-1090 Vienna, AUSTRIA
                                                                                                                                                                                                                                                                               Hoffmann-Sommergruber, K., Leberl, K., Scheiner, O. and New Bet v 1 isoforms including a naturally occurring of the protein derived from Austrian birch pollen Mol. Immunol. 36 (10), 639-645 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BVE6906 483 bp
Betula verrucosa mRNA
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                                                                                                                                                                                                                                                                  99437514
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/gene="betv1"
1. .483
                                                                                   /db_xref="taxon:3505"
/dev starce"-
                                               /tissue_type="pollen'
/note="from Austrian
                                                                                /dev_stage="mature"
                                                                                                                                               Location/Qualifiers
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98.1%;
                                                                  type="pollen"
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                                                                                                                                                                                 of Vienna, Waehringer Guertel
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Best Local Sim
Matches 471;
                            JOURNAL
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                                                                                                                                                                                                                           B.verrucosa mRNA for Z80105
           Submitted (06-SEP-1996)
Alle 10-12, Horsholm, DR
                                                                                                                                        Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheogeuphyllophytes; Spermatophyta; Magnollophyta; eudicotyledons; Rosidae; Fagales; Betulaceae; Betula.
                                                                                                                                                                            Betv1; pollen allergen.
European white birch.
Betula pendula
                                       Larsen, J.N.
Direct Submission
                                                                                                                                                                                                                  Z80105.1 GI:1542870
                                                                           Unpublished
                                                                                      PCR based cloning and pollen major allergen
                                                                                                                 Larsen,J.N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity 98.1
71; Conservative
                                                                                                                              (bases
                                                                (bases 1 to 483)
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(06-SEP-1996) Larsen
2, Horsholm, DK-2970,
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="betv1"
/codon_start=1
/codon_start=1
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/protein_id="CAA07321.1"
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"KIVATPDGGSILKISNKYHTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN
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98.1%;
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Pred. No. 2.7e-122;
0; Mismatches 9;
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Betula verrucosa, v
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2229).
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                    Betula pendula Betula pendula Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheop Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheop euphyllophytas; Spermatophyta; Magnoliophyta; eudicotyledons; Rosidae; Fagales; Betulaceae; Betula.

1 (bases 1 to 483)
                                                                                                                                  B.verrucosa
Z80101
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PCR based cloning and pollen major allergen
                                                                                              Betv1; pollen allergen.
European white birch.
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          gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
                                           ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag
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Larsen,J.N.
Direct Submission
Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research,
Alle 10-12, Horsholm, DK-2970, Denmark
Location/Qualifiers
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milarity 97.7%;
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Pred. No. 2.2e-121;
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Search completed: December 11, Job time: 21053 sec

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Post-processing: Minimum Match 0%
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Listing first 45 summaries
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Copyright (c) 1993 - 2000 Compugen Ltd.
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US-08-11-494A-3

US-08-728-956-1

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2774.004 Million cell updates/sec
           Sequence 21, Appl
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Sequence 6, Appli Sequence 6, Appli	Sequence 3, Appli	Sequence 2, Appli Sequence 2, Appli	Sequence 11, Appl	Sequence 11, Appl	Sequence 11, Appl	Sequence 19, Appl	•	Sequence 19, Appl		Sequence 19, Appl		Sequence 1, Appli	Sequence 12, Appl	Patent No. 5262177	Sequence 1, Appli	Sequence 41, Appl

C 39 29.6 6.2 4608 2 US. C 40 29.6 6.2 4608 4 US. 41 29.4 6.1 1820 1 US. 42 29.4 6.1 1120 1 US. 43 29.4 6.1 1120 2 US. 44 29.4 6.1 1120 2 US. 44 29.4 6.1 1120 2 US. 44 29.4 6.1 1120 2 US. 45 29.4 6.1 2111 4 US. US-07-847-010-21 US-07-847-010-21 US-07-847-010-21 Sequence 21, Application US/07847( Patent No. 5693495 GENERAL INFORMATION: APPLICANT: Breiteneder, Heimo APPLICANT: Reikerstorfer, Arna APPLICANT: Reitenbach, Michae APPLICANT: Scheiner, Otto APPLICANT: Ebner, Christof APPLICANT: Ebner, Christof APPLICANT: Scheiner, Otto APPLICANT: Scheiner, Otto APPLICANT: Ebner, Christof APPLICANT: Ebner, Christof APPLICANT: Scheiner, Otto APPLICANT: Ebner, Christof APPLICANT: Ebner, Christof APPLICANT: Scheiner, Otto APPLICANT: Scheiner, Otto APPLICANT: Breitenbach, Michae APPLICANT: Scheiner, Otto APPLICANT: New York COMPUTER READABLE FORM: APPLICANT UNINESS: ADDRESSEE: Pennie & Edmonds STREET: 1155 Avenue of the AUTHOR OF APPLICANT UNINESS: APPLICANT APPLICATION NUMBER: OSOFWARE: Patentin Release to COUNTRY USA.  ZIP: 10036-2711 COMPUTER READABLE FORMATION: APPLICATION NUMBER: US/07/84 COUNTRY: US.A. ZIP: 10056-2711 COMPUTER APPLICATION UNINERS: US/07/84 COUNTRY: US.A. ZIP: 10056-2711 COMPUTER APPLICATION UNINERS: 05-07/84 COUNTRY: US.A. ZIP: 10056-2711 COMPUTER APPLICATION UNINERS: 05-07/84 COUNTRY: US.A. ZIP: 10056-2711 COMPUTER APPLICATION UNINERS: 05-07/84 COUNTRY: US.A. ZIP: 10056-2711 COMPUTER: 01-UNINER: 02-09/86 COUNTRY: US.A. ZIP: 10056-2711 COMPUTER: 01-UNINER: 03-09/86 COUNTRY: 01-UNIN
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RESULT 2
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ORIGINAL SOURCE:
ORIGINAL SOURCE:
ORIGINAL SOURCE:
ORIGINAL SOURCE:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                           APPLICANT: Ebner, Christof
APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Applications Thereof
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                             APPLICANT:
                           STREET: 1155 Ave
CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711
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                                                                                               ADDRESSEE:
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                                                                                1155 Avenue of the Americas
                                                                                                                                                                                                                        Breitenbach, Michael
Kraft, Dietrich
                                                                                                                                                                                             Scheiner, Otto
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                                                                                                                                                                                                                                                    Hottmann -
                                                                                                                                                                                                                                                               Valenta, Rudolf
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Reikerstorfer, Arnold
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                                                                                               Pennie & Edmonds
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Pred. No. 3.2e-143;
0; Mismatches 6;
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SOFTWARE: Patentin Release #1.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847,
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-1
TELECOMMUNICATION INFORMATION:
TELEPAX: (212) 869-9741/8864
TELEPAX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 22:
SECURING CARACTERISTICS: 23
                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                      Matches 471;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: C
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: birc
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LIBRARY: POLLE
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LENGTH: 480 base pairs
                    421
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STRANDEDNESS: single
TOPOLOGY: linear
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GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAAC
          gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac
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SYSTEM: PC-DOS/MS-DOS
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98.7%;
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Pred. No. 2.5e-142;
0; Mismatches 6;
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RESULT 3
US-07-847-010-1
; Sequence 1, Application
; Patent No. 5693495

GENERAL INFORMATION:

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ORGANISM: Alder (Alnus sp.)
US-07-847-010-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE:
HYPOTHETICAL: N
ANTI-SENSE: NO
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6531
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-9741/8864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
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TITLE OF INVENTION: Allergens of Alder Pollen and
TITLE OF INVENTION: Applications Thereof
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NAME: Jones III, Harry C
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: FILING DATE: 01-JUN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: U.S.A. ZIP: 10036-2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                    1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctcccaac
                                                   GCCAGCCCTTTTAAGTACGTAAAGGAGAGGGTTGATGAGGTTGATCGCGTAAACTTCAAA
                                                                                                                   GTTGAGAACATTGAAGGAAATGGAGGGCCTGGAACCATCAAGAAGATCACCTTTCCCGAA
                                                                                                                                      gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
                                                                                                                                                                                   GCCTTTATCCTTGATGGCGATAAGCTCCTTCCAAAGGTTGCACCTGAAGCTGTTAGCAGT
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                                                                    GGTGTTTTCAATTACGAAGCGGAAACCCCCCTCCGTTATCCCAGCGGCTCGGCTGTTCAAG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    665 base pairs
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Kraft, Dietrich
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Reikerstorfer, Arnold
Valenta, Rudolf
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Ebner, Christof
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
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                                                                                                                                                                                                                                                                                                                    78.0%; Score 374.4; DB 2;
86.2%; Pred. No. 4.3e-112;
Live 0; Mismatches 66;
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RESULT 4
US-07-847-010-2
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US-07-847-010-2
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                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: JONES III, HAIRY C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9990
TELEPHONE: (212) 869-9741/8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2,
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                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOTWARE: Patentin Release #1.0 CURRENT APPLICATION DATA:
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                                    ORIGINAL SOURCE:
                                                     HYPOTHETICAL: I
                                                                                       MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
TITLE OF INVENTION: Applications Thereof
NUMBER OF SEQUENCES: 23
                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/O: FILING DATE: 01-JUN-1992 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATE: New York COUNTRY: U.S.A. ZIP: 10036-2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: New York
                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                 ORGANISM: Alder (Alnus sp.)
                                                                                                                           STRANDEDNESS:
                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
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                                                                                                                                          nucleic acid
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                                                                                                                                                               480 base
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ebner, Christof
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Scheiner, Otto
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Query Match Best Local Similarity

77.48; 86.28;

Score 371.4; DB 2; Pred. No. 3.4e-111;

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RESULT 5
US-07-847-010-15
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        FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY_AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,28
                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847,010
                                                                                                                                                                                                                                                                                                 APPLICANT: APPLICANT:
                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                               TITLE OF INVENTION: Allergens of TITLE OF INVENTION: Applications NUMBER OF SEQUENCES: 23
                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                        APPLICANT:
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CITY: New York
STATE: New York
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                                                                                                                                                               COUNTRY: U.S.A. ZIP: 10036-2711
  REFERENCE/DOCKET
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1155 Avenue of the !
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Breitenbach, Michael
Kraft, Dietrich
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Ebner, Christof
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           , Harry C
SER: 20,280
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                                                                                                                                                Sequence 16, Application Patent No. 5693495
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Best Local Similarity
                                                                                                                                     GENERAL INFORMATION:
                       APPLICANT:
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APPLICANT:
APPLICANT:
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APPLICANT:
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HYPOTHETICAL: NO
ANTI-SENSE: NO
 TITLE
           APPLICANT:
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 INVENTION:
           Ebner, Christof
Ferreira, Fatim
                                   Scheiner, Otto
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Allergens
           Fatima
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TELEFAX: (212) 790-9090

TELEFAX: (212) 899-9741/8864

TELEX: 66141 PENNIE

INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
LENGTH: 655 base ~~**
Type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 655 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
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                       Breitenbach, Michael
Kraft, Dietrich
Rumpold, Helmut
                                                                    Hoffmann - Sommergruber,
                                                                                          Valenta, Rudol
                                                                                                               Reikerstorfer,
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Pred. No. 2.4e-105;
0; Mismatches 79;
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FITLE OF INVENTION:

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NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-9741/8864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: C
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IMMEDIATE SOURCE:
LIBRARY: POLLE
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APPLICATION NUMBER: US/0:
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET: LLL.
C'TY: New York
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                                                                                                                                        241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaaagatctcccaac
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                                                                                                                                                                                                                                                                                                         64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123
                                                                                                                                                                                                                                                                                                                        61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM:
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                                                                                                                                                                                                   ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
                                                                                                                                                                                                                                              GTTGAAAACGTTGAAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183
                                                                                                                                                                                                                                                                gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa
                cacaccaaaggtgaccatgaggtgaaggcaggagcaggttaaggcaagtaaagaaatgggc 420
                                                                           GGCAGCCGTTACAAGTACGTGAAGGAGGAGGGTTGATGAGGTTGACAACACAAACTTCACA
CACGCCAAAGGTGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC
                                                           GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC
                                                                                                                        TACAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                   398;
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10036-2711
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EDNESS: single
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1155 Avenue of the i
                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
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Pred. No. 1.9e-104;
0; Mismatches 79;
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                                                                                                                                       US-07-847-010-12
                                                                        Query Match
Best Local Similarity
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                                                           Matches
                                                                                                                                                                                                                                                                                                                                       TELEFAX: (212) 869-97
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                              MOLECULE TYPE:
HYPOTHETICAL: N
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,2
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: TEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
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TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                 IMMEDIATE SOURCE:
                                                                                                                                                                                   ORIGINAL SOURCE: ORGANISM: haz
                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 742 base pairs
                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (212) 790-9090
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MEDIUM TYPE: Floppy disk
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                                                                                                                                                      LIBRARY:
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                                                                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: New York
STATE: New Yor
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4
                1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
GGTGTTTTCAATTACGAGGTTGAGACTCCCTCCGTTATCCCAGCGGCAAGGCTGTTCAAG 63
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                                                                                                                                                                                                                                                                                                                                                                        (212) 869-9741/8864
                                                           Conservative
                                                                                                                                                      POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
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/ENTION: Allergens of Alder Pollen and
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Scheiner, Otto
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Kraft, Dietrich
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                                                          Score 348.8; DB 2;
Pred. No. 9.1e-104;
0; Mismatches 82;
                                                                                          DB 2;
                                                          Indels
                                                                                       Length
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                   TELEPAX: (212) 869-7 TELEX: 66141
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Patent No. 5693495
GENERAL INFORMATI
                      TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO:
                                                                                                                                                                         COMPOTER READABLE FORM:
COMPOTER READABLE Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, 1
CURRENT APPLICATION DATA:
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           SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: Allergens of TITLE OF INVENTION: Applications NUMBER OF SEQUENCES: 23
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                                                                                                                                     APPLICATION NUMBER: US/OFILING DATE: 01-JUN-1992 CLASSIFICATION: 435
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CITY: New York
STATE: New Yor
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LENGTH:
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Rumpold, Helmut
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Ferreira, Fatima
                                                                                                                                                                                                                                                                                                                                                                                                           Scheiner, Otto
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Valenta, Rudolf
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                                                                                                                                                                                        Release #1.0,
                                                                                                                                                             US/07/847,010
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                                                                                                                                                                                                                                                                                                       the Americas
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ons Thereof
                                                                                                                                                                                         Version
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Best Local Similarity
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HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: hazel (Corylus sp.)
IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERGON A
                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                APPLICANT:
APPLICANT:
APPLICANT:
                                                         TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                            CORRESPONDENCE ADDRESS
                                                                                                           APPLICANT:
                                                                                                                                      APPLICANT:
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ADDRESSEE: Pennie & STREET: 1155 Avenue CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
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STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 GGTGTTTTCAATTACGAGGTTGAGACTCCCTCCGTTATCCCAGCGGCAAGGCTGTTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaaagatctccaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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                                                                                                                                                                                                                                                                                                                                                                        GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAAC 480
                                                                                                                                                                                                                                                                                                                                                                                        gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                     cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc
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                                                                                                                                                                                                                                                                                                                                                                                                                                     CACGCCAAAGGCGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC
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                                                           Ferreira, Fatima
ERNTION: Allergens of Alder Pollen
EENTION: Applications Thereof
SQUENCES: 23
                                                                                                                                                                   Breitenbach, Michael
Kraft, Dietrich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
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                                                                                                                                                    Rumpold, Helmut
                                                                                                                      Ebner, Christof
                                                                                                                                      Scheiner, Otto
                                                                                                                                                                                                 Hoffmann - Sommergruber,
                                                                                                                                                                                                                                              Breiteneder, Heimo
                                                                                                                                                                                                                Valenta, Rudolf
                                                                                                                                                                                                                                Reikerstorfer,
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82.8%;
              Edmonds
of the Americas
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
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US-07-847-010-9
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Best Local Similarity
Matches 396; Conserv
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TELEFAX: (212) 869-9741/8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/07/847
FILING DATE: 01-TUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE:
HYPOTHETICAL: N
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: hazel (Corylus sp.)
IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERGON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
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121 gttgaaaacattgaaggaaatggaggcctggaaccattaagaagatcagctttcccgaa 180
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OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                       gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
                                                                                                                                                         gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaaccaagtac
                                                                                                                                                                                                                               cacaccaaaggtgaccatgaggtgaaggcaggtcaaggttaaggcaagtaaagaaatgggc
                                                                                                                                         GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC
                                                                                                                                                                                                           TACAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCCAC
                                                                                                                                                                                                                                                                                                 CACGCCAAAGGCGACCATGAGATTAATGCAGAGGAGGATGAAGGGTGCCAAAGAAATGGCA
                                                                                                                                                                                                                                                                               GGCAGCCGTTACAAGTACGTGAAGGAGGGTTGATGAGGTTGACAACAACAACTTCACA
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10036-2711
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82.5%;
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Pred. No. 9.1e-103;
0; Mismatches 84;
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                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                             Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (212) 869-97
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE:
HYPOTHETICAL: N
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: JONES III, HAITY C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 65:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                           ORGANISM: haze IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 860 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                          ORIGINAL SOURCE:
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124
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                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: nucleic acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/0
FILING DATE: 01-JUN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 1155 A
CITY: New York
STATE: New Yor
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                                                                                                                                            1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag
                gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
GTTGAAAACGTTGGAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA
                                                                             gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
                                                                                                                           GGTGTTTTCAATTACGAGGTTGAGACCCCCCTCCGTTATCTCAGCGGCAAGGCTGTTCAAG 63
                                                             TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123
                                                                                                                                                                                             395;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          860 base pairs
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                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                            POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ferreira, Fatima
VENTION: Allergens of Alder Pollen and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Breitenbach, Michael
Kraft, Dietrich
                                                                                                                                                                                                                                                                                                                         hazel (Corylus sp.)
                                                                                                                                                                                                                                                                                                                                                                                                          linear
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NO
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                                                                                                                                                                                                           71.7%;
82.3%;
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                                                                                                                                                                                             0;
                                                                                                                                                                                          Score 344; DB 2;
Pred. No. 3.6e-102;
0; Mismatches 85;
                                                                                                                                                                                                                          Length 860
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RESULT 11
US-07-847-010-10
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                                                                                                                                     TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: JONES III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 65:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Release CURRENT APPLICATION DATA:
APPLICATION UNBER: US/O:
FILING DATE: 01-UUN-1992
CLASSIFICATION: 435
ANTI-SENSE:
ORIGINAL SOI
                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                            HYPOTHETICAL:
                                       MOLECULE TYPE:
                                                                                                                     SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Allergens of TITLE OF INVENTION: Applications NUMBER OF SEQUENCES: 23
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                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0
                                                             TOPOLOGY:
                                                                         STRANDEDNESS:
                                                                                 LENGTH: 480 base pairs
TYPE: nucleic acid
                                                                                                                                                                   TELEFAX:
                                                                                                                                                                               TELEPHONE:
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   SOURCE
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                                                                                                                                                                   E: (212) 790-9090
(212) 869-9741/8864
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Ferreira, Fatima
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Valenta, Rudolf
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Patent No.
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Best Local
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APPLICANT: Ferreira,
TITLE OF INVENTION: I
TITLE OF INVENTION: I
           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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APPLICANT:
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IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERGON
                                                                                        LITY: New York
STATE: New Tork
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                                                                       COUNTRY: U.S.A. ZIP: 10036-2711
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mes 393; Conserv
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Ferreira, Fatima
VENTION: Allergens of Alder Pollen
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Hoffmann - Sommergruber,
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PatentIn Release #1.0,
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Pred. No. 7.4e-102;
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US-08-363-010-3
; Sequence 3, Application US/08363010
; Patent No. 5512484
; GENERAL INFORMATION:
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Best Local Similarity
Matches 392; Conserv
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TELEPHONE: (212) 790-9990
TELEFAX: (212) 869-9741/8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 19:
SEQUENCE CHARACTERISTICS:
APPLICANT: Yamamoto, Mika APPLICANT: Oheda, Kenji TITLE OF INVENTION: CARROT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: hazel (Corylus sp.)
IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: CI
HYPOTHETICAL: NO
ANTI-SENSE: NO
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TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 65
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LIBRARY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 01-JUN-1992
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82.2%;
 CARROT 16
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Pred. No. 2.5e-101;
0; Mismatches 85;
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 GENE CODING
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SEQUENCE CHARACTERISTICS:
LENGTH: 739 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/363,010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ANTI-SENSE: NO ORIGINAL SOURCE:
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HYPOTHETICAL: r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (703) 205-8000
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NUMBER OF SEQUENCES:
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ORGANISM: Kuroda Gosun
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OPERATING SYSTEM: PC-DOS/MS-DOS
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CITY: Falls Church
STATE: Virginia
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TELEX: 248345
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/0 FILING DATE: 23-DEC-1994
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GTTCCTGAGGAGAACATCAAGTTTGCAGATGCTCAGAACACTGCTCTTTTCAAGGCTATT
                                                                                                                        GGAGACATCCTTCTAGAATTCATCGAATCCATTGAAACCCATATGGTAGTTGTGCCAACT
                                                                                                                                                  ggcggtcccataggcgacacattggagaagatctccaacgagataaagatagtggcaacc
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                                                           GCTGACGGAGGTAGCATTACCAAGACCACTGCCATATTCCACACCCAAAGGCGATGCCGTG
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8110 Gatehouse Road
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Pred. No. 3.6e-32;
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ad, Suite
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US-08-363-010-2
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Best Local Similarity
Matches 252; Conserv
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NAME: Svensson, Leonard R.
REGISTRATION NUMBER: 30,330
REFERENCE/DOCKET NUMBER: 20-3
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 205-8000
TELEPAX: (703) 205-8050
TELEFAX: (703) 205-8050
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LENGTH: 465 base pairs
TYPE: nucleic acid
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CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
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ACGGTTAGGACTGATGCAGTGAACAAGGAGGCCTTGACATACGATTCCACAGTCATTGAT
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Y: U.S.A.
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8110 Gatehouse
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Road, Suite 500 East
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Pred. No. 6.9e-32;
0; Mismatches 187;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;DANIEL A.
                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO:1:
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APPLICANT: HADWIGER,
                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                 Matches 163;
                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/
FILING DATE: 13-JUN-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: PROCEDURES AND REGULATORY DNA SEQUENCES
                                                             1610
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                                                                                                                                                                                                                                                                                                                              Local Similarity
                   gagggccgttgagagctacctcttggcacactccgatgcctacaactaa
                                                                                                                                        agtggcaacccctgatggaggatccatcttgaagatcagcaacaagtaccaccaccaaagg 371
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                                                                                                                                                                                  catagttggaggtgttggacttccggacacagttgagaagatctcgtttgaggctaaatt 1549
                                                                                                                                                                                                                                                caagtatgtgttacacaaagtggagttagtagatgatgctaactgggcaaacaactacag 1489
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caaggctcttgaaggttactgtgtggctaatcctgattacaactaaaaa
                                                            tgatgctattcctagtgaagaggaaatcaagaatggcaaagccaaaggtgaaggtatttt
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Pred. No. 9.7e-19;
0; Mismatches 126;
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Search completed: December 11, 2000, 15:57:10 Job time: 19997 sec

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Result
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      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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3: pir3:*
4: pir4:*
     December 11, 2000, 09:41:43; Search time 508:71 Seconds (without alignments)
19.835 Million cell updates/sec
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
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stress response ge
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pathogenesis-relat
pathogenesis-relat
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pathogenesis-relat	T14918		155	36.9	302	45
major allergen Api	S63984		154	37.9	310.5	44
pathogenesis-relat	S04553		155	38.1	312	43
pathogenesis-relat	S04552		155	38.6	316	42
TSI-1 protein - to	T07403		178	38.7	317	41
pathogenesis-relat	S12568		158	40.4	330.5	40
pathogenesis-relat	S42649		157	40.6	332.5	39
STH-2 protein - po	S35161		155	41.8	342.5	38
STH-21 protein - p	S35162	2	155	41.8	342.5	37
pathogenesis relat	T11670		155	44.3	362.5	36
pathogenesis-rel.	SNFB2		155	44.3	362.5	S
hypothetical prote	S20517		158	44.8	367	34
pathogenesis-relat	S52664		155	44.8	367	3
pathogenesis-relat	SNFB1		156	45.2	370	32
pathogenesis-relat	S47140		158	45.3	371	31
disease resistance	T06768		159	45.7	374.5	30

## ALIGNMENTS

Query Match 99.5%; Score 815; DB 2; Length 160; Best Local Similarity 99.4%; Pred. No. 2.2e-64; Matches 158; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  Qy 1 GVENYETETT3VIPAARLEKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60	A; Molecule type: protein A; Molecule type: protein A; Molecule type: protein A; Residues: 2-39, 'XX', 42-44 <ips> A; Residues: 2-39, 'XX', 42-44 <ips> A; Cross-references: pID:9239734; PIDN:AAB20452.1 A; Experimental source: pollen A; Note: sequence extracted from NCBI backbone (NCBIP:68408) A; Note: the source is designated as Betula verrucosa C; Comment: This protein induces IgE synthesis by B cells in a T cell dependent manner C; Superfamily: pathogenesis-related protein C; Keywords: pollen C; Keywords: pollen F; 2-160/Product: major pollen allergen Bet v 1 #status experimental <mat></mat></ips></ips>	A; Molecule type: mRNA A; Residues: 1-160 < KUN- R; Ipsen, H.; Hansen, O.C. R; Ipsen, H.; Hansen, O.C. Mol. Immunol. 28, 1279-1288, 1991 A; Title: The NHZ-terminal amino acid sequence of the immunochemically partial identical sylvariants and oak (Quercus alba) Que a I pollens. A; Reference number: A53288; MUID:92072607 A; Accession: B53288 A; Accession: B53288	A;Molecule type: mRNA A;Molecule type: mRNA A;Residues: 1-160 <bred: a;cross-references:="" embl:x15877;="" expansion<="" nid:g17937;="" pid:g17938="" pidn:caa33887.1;="" td=""><td>RESULT 1  S05376  S05376  C;Species: Betula pendula (European white birch C;Species: Betula pendula (European white birch C;Accession: S05376; JC4834; B53288 C;Accession: S05376; JC4834; B53288 C;Accession: S05376; JC4834; B53288 C;Accession: S05376; JC4834; B53288 A;Fitherence number: S05376; MUID: 90005395 A;Reference number: S05376; MUID: 90005395</td></bred:>	RESULT 1  S05376  S05376  C;Species: Betula pendula (European white birch C;Species: Betula pendula (European white birch C;Accession: S05376; JC4834; B53288 C;Accession: S05376; JC4834; B53288 C;Accession: S05376; JC4834; B53288 C;Accession: S05376; JC4834; B53288 A;Fitherence number: S05376; MUID: 90005395 A;Reference number: S05376; MUID: 90005395

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A;Title: Isoforms of Bet v 1, the major birch pollen allergen, an A;Reference number: A55699; MUID:95155322
A;Accession: D55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77267; NID:9452733; PIDN:CAA54483.1; PID A;Note: the source is designated as Betula verrucosa C;Superfamily: pathogenesis-related protein C;Keywords: pollen
F;2-160/Product: major pollen allergen.
                                                                                                                                                                                                                                                                                                                                     RESULT 3
D55699
major pollen allergen Bet v le - Europe
C;Species: Betula pendula (European whi
C;Date: 01-Dec-1995 #sequence_revision
C;Accession: D55699; S41899
R;Swoboda, I.; Jilek, A.; Ferreira, F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch
A;Reference number: A55699; MUID:95155322
A;Accession: G55699
A;Molecule type: mRNA
A;Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    major pollen allergen Bet v 1j - European white birch C;Species: Betula pendula (European white birch) C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change C;Accession: G55699; S41902 R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Somm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:X77271; NID:g452739; PIDN:CAA54 A;NOte: the source is designated as Betula verrucosa C;Superfamily: pathogenesis-related protein C;Keywords: pollen C;Keywords: pollen allergen Bet v 1j #status
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Matches 152
                                                               Query Match
Best Local S
Matches 151
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ries: Betula pendula (European white birch)
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                                                               Local Sin
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95.6%;
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                                                                              Score
Pred.
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Pred. No. 1.2e-62;
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                                                               d. No. 3.40
Mismatches
                                                                            . 790;
3.
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2;
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                                                                                                                                                                                                                                                                                                                                              E.; Hoffmann-Sommergruber, K.;
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A.Title: Isoforms of Bet v 1, the major birch A;Reference number: A55699; MUID:95155322
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C; Keywords: polle
F; 2-160/Product:
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                                                                                                                                                                                                                                                                                A;Cross-references: EMBL:X77274; NID:g452745; PIDN:CAA54490.1; A;Note: the source is designated as Betula verrucosa C;Superfamily: pathogenesis related protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: EMBL:X77268; NID:g452735; PIDN:CAA54484.1; A;NOte: the source is designated as Betula verrucosa R;Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffman-So submitted to the EMBL Data Library, January 1994
                                                                                                                                                                                                                                                                                                                                               A; Molecule type: mRNA
A; Residues: 1-160 <SW2>
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A; Accession: $41905
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A; Residues: 1-160 <SWO>
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etula pendula (European white birch)
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                                                                                                                                                               Score 789; DB 2;
Pred. No. 4.1e-62;
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A; Molecule type: mRNA
A; Residues: 1-160 <SWO>
A; Cross-references: EMBL:X77266; NID:g452731; PIDN:CAA54482.1;
A; Note: the source is designated as Betula verrucosa
R; Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffman-Sc
                                                                                                            A;Title: Isoforms of Bet v 1, the major birch A;Reference number: A55699; MUID:95155322 A;Accession: C55699
                                                                                                                                                                                                                                          major pollen allergen Bet v 1d/h - European white birch C;Species: Betula perdula (European white birch) C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text C;Accession: C55699; S41901; S41898
                                                                                                                                                                                                                        R; Swoboda, I.;
                                                                                                                                                                               J. Biol. Chem.
                                                                                                                                                                                 270,
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121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159

HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 160

GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 121

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ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyze
A;Reference number: A55699; MUID:95155322
A;Accession: F55699
A;Accession: F55699
A;Accession: F55699
A;Accession: F55699
A;Accession: F55699; MUID:9452727; PIDN:CAA54485.1; PID:94:
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77269; NID:9452727; PIDN:CAA54485.1; PID:94:
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Reywords: pollen
C;Reywords: pollen
C;Reywords: pollen
C;Reywords: pollen
C;Reywords: carbohydrate (Asn) (covalent) #status experimental
F;2-160/Product: major pollen allergen Bet v 1g #status experimental
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              submitted to the EMBL Data Library, January 1994
A.Reference number: S41896
A; Accession: S41901
A; Status: preliminary
A; Molecule type: mRNA
A; Residues: 1-160 <SW2>
A; Cross-references: EMBL:X77270; NID:9452737; PIDN:CAA54486.1;
A; Note: the source is designated as Betula verrucosa
C; Superfamily: pathogenesis-related protein
C; Keywords: pollen
C; Keywords: pollen
F; 2-160/Product: major pollen allergen Bet v 1d/h #status exper
F; 83/Binding site: carbohydrate (Asn) (covalent) #status absent
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4; Mismatches
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A;Cross-references: EMBL:X82028; NID:g807869; PIDN:CAA57550.1; A;Note: the source is designated as Betula verrucosa C:Superfamily: pathogenesis-related protein C;Keywords: pollen C;Keywords: pollen allergen Bet v lm/n #status experf;2-160/Product: major pollen allergen Bet v lm/n #status exper
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A; Accession: I55699
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                major pollen allergen Bet v lm/n - European white birch (;Species: Betula pendula (European white birch) C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #tex C;Accession: A57427; S49450
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C;Keywords: pollen allergen Bet v ll #status (
F;2-160/Product: major pollen allergen Bet v ll #status (
n.ºo? psinding site: carbohydrate (Asn) (covalent) #status
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C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change
C;Accession: I55699; S41904
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Somm
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A;Reference number: A55699;
A;Accession: A57427
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A; Residues: 1-160 <ENG>
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A; Residues: 1-160 <SWO>
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GVFNYESETTSVIPAARLFKAFILDGDNLIPKVAPQAISSVENIEGNGGPGTIKKITFPE
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142; Conser
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93.7%;
                                                                                            90.4%;
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MUID:95155322
                                                                          Score 740; DE
Pred. No. 8e-5
8; Mismatches
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                                                                                            ; DB 2;
8e-58;
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2.5e-61;
les 5;
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J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allerge
A;Reference number: A55699; MUID:95155322
A;Accession: H55699
A;Accession: H55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77272; NID:g458478; PIDN:CAA54488.
A;Cross-references: EMBL:X77272; NID:g458478; PIDN:CAA54488.
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
C;Keywords: pollen
C;Keywords: pollen
C;Keywords: pollen
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J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen,
A;Reference number: A55699; MUID:95155322
A;Accession: A55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77200; NID:g450884; PIDN:CAA54421.1;
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
C;Keywords: pollen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           major pollen allergen Bet v 1k - European white birch (;Species: Betula pendula (European white birch) (;Species: Betula pendula (European white birch) (;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change (;Accession: H55699; S41903 (;Accession: H55699; S41903 (;Accession: H5699; S4190) (;Accession: H5699) (;Accession: H56999) (;Accession: H56999) (;Accession: H56999) (;Accession: H569999) (;Accession: H569999) (;Accession: H5699999) (;Accession: H5699999) (;Accessio
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A55699
A570 pollen allergen Bet v lb - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec:1995 #sequence_revision 01-Dec:1995 #text_change
C;Accession: A55699; S41401
C;Accession: A55699; S41401
R;Swoboda, I; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Somm
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Score 730; DB 2;
Pred. No. 6e-57;
9; Mismatches 1(
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Pred. No. 2.7e-57;
8; Mismatches 10
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                                                       Length 160;
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Query Match
Best Local Similarity
Matches 135; Conserv
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J. Biol. Chem. 270, 2607-2613, 1995
A; Title: Isoforms of Bet v 1, the major birch pollen al A; Reference number: A55699; MUID:95155322
A; Accession: B55699
A; Molecule type: mRNA
A; Residues: 1-160 <SWO>
A; Cross-references: EMBL:X77265; NID:g452729; PIDN:CAA5
A; Cross-references: EMBL:X77265; NID:g452729; PIDN:CAA5
A; Note: the source is designated as Betula verrucosa
C; Superfamily: pathogenesis-related protein
C; Keywords: pollen
C; Keywords: pollen
F; 2-160/Product: major pollen allergen Bet v 1c #status
                                                                                                                     major pollen allergen Bet v 1c - European white birch C;Species: Betula pendula (European white birch) C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change C;Accession: B55599; S41897 R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Somm
A;Cross-references: EMBL:X77599; NID:g53490: A;Note: the source is designated as Betula C;Superfamily: pathogenesis-related protein
                                                    A; Molecule type: mRNA
A; Residues: 1-160 <SWO>
                                                                                                           A; Reference number: A; Accession: S47250
                                                                                       A; Status: preliminary
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nilarity 87.4%;
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                                    NID:g534909; PIDN:CAA54694.1;
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Pred. No. 3e-56;
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Conservative

86.3%;

Score 707; DB 2; Pred. No. 6.1e-55; 9; Mismatches 15

Length 160;

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A;Title: Four recombinant iso
A;Reference number: $30053; M
A;Accession: $30054
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Residues: 1-160 <BRE>
A;Cross-references: EMBL:X710
C;Genetics:
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$30054

$30054

$30054

major allergen Cor a I/6 - European hazel

C;Species: Corylus aveliana (European hazel)

C;Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999

C;Accession: $30054
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C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
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                              Conservative
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                                                                                                                                                           EMBL:X71000; NID:g22689; PIDN:CAA50328.1; PID:g22690
                                          75.8%;
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                            22;
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                            Score 621; DB 2;
Pred. No. 2.1e-47;
2; Mismatches 21
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Pred. No. 1.4e-54;
9; Mismatches 15
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C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
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C;Species: Corylus avellana (European hazel)
C;Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999
C;Accession: $30055; $33507
R;Breiteneder, H.; Ferreira, F.; Hoffmann-Sommergruber, K.; Ebner, C.; Brei
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A;Residues: 1-133,'I',135-160 <BRE2>
A;Cross-references: EMBL:X70997; NID:g22683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eur. J. Biochem. 212, 355-362, 1993
A; Title: Four recombinant isoforms of Cor a I,
A; Reference number: $30053; MUID:93185652
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A;Residues: 1-160 <BRE1>
A;Cross-references: EMBL:X70997
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73.0%; Pred. No. 2.1e-47;
tive 22; Mismatches 21;
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GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.

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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 2000000000
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Perfect score:
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 SPIREMBL_14:*

1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_virus:*
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1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159
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19.762 Million cell updates/sec
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sp_organelle:*
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sp_manmal:*
sp_mhc:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

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Result	Score	Query Match Le	Length	DB	ID	Description
ב	814	99.4	160	10	Q96366	Q96366 betula verr
2	812	99.1	160	10	024642	betula
ω	810	98.9	160	10	Q42499	betula
4	808		160	10	023752	betula
υ	807	98.5	160	10	Q96371	betula
σ	806	98.4	160	10	Q9SCH8	Q9sch8 betula verr
7	805		160	10	Q96370	betula
8	804	98.2	160	10	Q9SCIO	Q9sci0 betula verr
٥	804		160	10	Q9SCH9	Q9sch9 betula verr
10	803		160	10	Q96365	Q96365 betula verr
11	803		160	10	Q9SYW1	Q9sywl betula verr
12	801		160	10	Q96368	betula
13	801		160	10	Q9SCI2	betula
14	800		160	10	Q9SYW0	Q9syw0 betula verr
15	799	97.6	160	10	Q9SCI3	Q9sci3 betula verr
16	798	97.4	159	10	023748	023748 betula verr
17	798	97.4	160	10	Q96367	Q96367 betula verr
18	798	97.4	160	10	023753	betula
19	796	97.2	160	10	023754	023754 betula verr

795 97.1 160 10 Q39426 793 96.8 160 10 Q23751 792 96.7 160 10 Q23751 792 96.7 160 10 Q9SYW2 793 96.3 160 10 Q9SCH5 794 96.2 160 10 Q9SCH5 795 95.1 160 10 Q39431 797 96.1 160 10 Q39431 798 96.2 160 10 Q39431 799 96.3 160 10 Q39431 790 970 10	44	43	42	41	. U	38	37	36	ယ 5	34	<u>ω</u>	32	31	30	29	28	27	26	25	24	23	22	21	20	
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# ALIGNMENTS

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61 GLÞFKYVKDRVDEVDHTNFKYNYSVIEGGÞIGDTLEKISNEIKIVATÞDGGSILKISNKY 120 	1 GVENYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60 	Query Match 99.4%; Score 814; DB 10; Length 160; Best Local Similarity 98.7%; Pred. No. 9.6e-62; Matches 157; Conservative 1; Mismatches 1; Indels 0; Gaps 0;	SEQUENCE 160 A.; 17557 MW; B2174110A9588AD4 CRC64;	PRODOM; PD000531; -; 1.	ERGEN.	PFAM; PF00407; Bet_v_I; 1.	MENDEL; 30889; Betve;1174;30889.	P15494: 1BTV.	PROTEIN.  EMBL: 280101: CABO2156.1: -	TO T	Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.			SECULENCE EBOW N P	Betulaceae; Betula.	eurosids I; I		Retula Guidagea (White birch) (Betula pendula).	-2000 (TT	(TrEMBLrel. 02, Last	-1997 (TrEMBLrel.	Q96366;	Q96366 PRELIMINARY; PRT; 160 AA.	ILT 1

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Best Local S
Matches 157
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EMBL; AJ002107; CAA05187.1; -.
HSSP; P15494; IBTV.
MENDEL; 24383; Betve; 1174; 24383.
INTERPRO; IPR000916; -.
PFAM; PF00407; Bet_v_I; 1.
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Q42499;
01-NOV-1996 (TrEMBLrel. 0
01-NOV-1996 (TrEMBLrel. 0
01-JUN-2000 (TrEMBLrel. 1
MAJOR ALLERGEN BET V 1.
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024642;
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01-JAN-1998 (TrEI
01-JUN-2000 (TrEI
POLLEN ALLERGEN )
                                    BETV1.

Betula verrucosa (White birch)
Eukaryota; Viridiplantae; Embry
Magnoliophyta; eudicotyledons;
Betulaceae; Betula.
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PROSITE; PS00451; PATHOGENESIS_BETVI;
PRODOM; PD000531; -; 1.
Pathogenesis-related protein.
SEQUENCE 160 AA; 17589 MW; D8A0411
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Eukaryota; Viridiplantae; Embryophyta;
Magnollophyta; eudicotyledons; Rosidae;
Betulaceae; Betula.
                     SEQUENCE FROM N.A.
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157; Conserv
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(TrEMBLrel.
RGEN BETV1.
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997) to the EMBL/GenBank/DDBJ databases.
BELONGS TO THE BETVI FAMILY OF PATHOGENY
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98.7%;
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1; Mismatches
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Last sequence update)
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Yophyta;
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                                                                                 Rosidae;
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eurosids I; F
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;; eurosids I; F
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O23752;
O1-JAN-1998 (TrEMBLrel. 0)
O1-JAN-1998 (TrEMBLrel. 0)
O1-JUN-2000 (TrEMBLrel. 1)
POLLEN ALLERGEN BETV1.
          EMBL; AJ002108; CAA05188.1; -.
HSSP; P15494; IBTV.
MENDEL; 26841; Betve;1174;26841.
INTERPRO; IPR000916; -.
PFAM; PF00407; Bet_V_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BE
PRODOM; PD000531; -; 1.
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                                                                                                                                                                                                                              Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., I
Riordain G., Scheiner O., Breiteneder H.;
Submitted (CCT-1997) to the EMBL/GenBank/DDBJ databases
-!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGEN
                                                                                                                                                                                                                                                                                                                                                                                                                               Betula verrucosá (White birch) (Betula pendula).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta;
Magnoliophyta; eudicotyledons; Rosidae; eurosids I; i
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PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI;
PRODOM; PD000531; -; 1.
Pathogenesis-related protein.
SEQUENCE 160 AA; 17541 MW; E395041
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Leberl K., Scheiner O., Breiteneder H.;
"New Betvi isoforms including a naturally occurring tru
the protein derived from Austrian birch pollen.";
Submitted (JUN-1998) to the EMBL/GenBank/DDBJ databases
-i- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGEN
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MENDEL; 36840; Betve;1174;36840.
INTERPRO; IPRO00916; -.
                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM TISSUE-POLLEN;
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les 157; Conservative
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PD000531;
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                                        PATHOGENESIS_BETVI;
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No. 2.1e-61;
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Best Local Similarity
Matches 157; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               096371;
01-FEB-1997 (TrEMBLrel. 0
01-FEB-1997 (TrEMBLrel. 0
01-JUN-2000 (TrEMBLrel. 1
POLLEN ALLERGEN BET V 1.
 Q9SCH8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pathogenesis-related SEQUENCE 160 AA; 1
                                                                                                                                                                                                                                                          PRINTS; PRO0634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI;
PRODOM; PD000531; -; 1.
Pathogenesis-related protein.
SEQUENCE 160 AA; 17670 MW; 69B441
                                                                                                                                                                                                                                                                                                                 EMBL; Z80106; CAB02161.1; -.
HSSP; P15494; 1BTV.
MENDEL; 30893; Betve;1174;30893
INTERPRO; IPR000916; -.
PFAM; PF00407; Bet_v_I; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Betula verrucosa (White birch) (Betula pendula).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
Betulaceae; Betula.
                                                                                                                                                                                                                                                                                                                                                                                    Submitted (SEP-1996) to the EME-i- SIMILARITY: BELONGS TO THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q96371
                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE=POLLEN OBTAINED
                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                           Larsen J.N.;
                                                                  122
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                                                                                      HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN
                                                                                                              GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY
                                                                                                                                                         GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE
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                                                                  HTKGDHEVKAEQVKASKEMRETLLRAVESYLLAHSDAYN
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                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel. 02, Created)
(TrEMBLrel. 02, Last sequence update)
(TrEMBLrel. 14, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
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            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d protein.
17523 MW;
                                                                                                                                                                                                               98.5%;
98.7%;
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98.7%;
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                                                                                                                                                                                                     0;
                                                                                                                                                                                                     Score 807; DB Pred. No. 3.7e 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                EMBL/GenBank/DDBJ databases
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            PRT;
                                                                                                                                                                                                                                                                                                                                                                                    BETVI FAMILY OF PATHOGENESIS-RELATED
                                                                                                                                                                                                                                                            69B4410BBA6A1AC6 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
            160
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.7e-61;
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RESULT

Q96370

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OC OC DT OC Q9

RRD OC DT OC Q9
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Best Local :
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Leberl K., Scheiner O., Breiteneder H.;
"New Bet v 1 isoforms including a naturally oc-
of the protein derived from Austrian birch pol.
Mol. Immunol. 38:639-645(1999).
EMBL; JO06911; CAA07326.1; -.
INTERPRO; IPRO00916; -.
PFAM; PF000407; Bet_v_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SEQUENCE 160 AA; 17631 MW; D8A9575C4C393DA
                                           EMBL; Z80105; CAB02160.1; -
HSSP; P15494; 15TV
MENDEL; 30892; 3etve;1174;30892.
INTERPRO; IPR007916; -
PFAM; PF00407; 3et_v_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1
PRODOM; PD000531; -; 1.
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01-MAY-2000
01-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q96370
Q96370;
                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUN-2000 (TrEMBLrel. 14, Last annotat POLLEN ALLERGEN BET V 1.
Betula verrucosa (White birch) (Betula perkaryota; Viridiplantae; Embryophyta; Magnoliophyta; audicotyledons; Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Betula verrucosa (White birch) (Betula
Eukaryota; Viridiplantae; Embryophyta;
Magnoliophyta; eudicotyledons; Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAY-2000 (TrEMBLrel.
01-JUN-2000 (TrEMBLrel.
POLLEN ALLERGEN BETV1, J
                                                                                                                                                                                                                                                       Submitted (SEP-1996) to -!- SIMILARITY: .BELONGS
                                                                                                                                                                                                                                                                                     Submitted (SEP-1996)
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                        Pathogenesis-related
                                                                                                                                                                                                                                                                                                                              TISSUE=POLLEN
                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM
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                                                                                                                                                                                                                                    PROTEIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GVFNYETETTSLIPAARLFRAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel.
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  d protein.
17541 MW;
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97.5%;
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. 13, Last sequence up
. 14, Last annotation
ISOFORM AT50.
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Pred.
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    D8AF110BBD1CDADB
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_D8A9575C4C393DA0 CRC64;
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No. 4.5e-61;
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Tracheophyta;
eurosids I; F
                                                                                                                                                                                                                                                                                                                                                                                                                        Tracheophyta; Spermatophyta;
eurosids I; Fagales;
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                                                                                                                                                                                                                                                                                     databases
                                                                                                                                                                                                                                                          PATHOGENESIS-RELATED
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Fagales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           truncated form
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Best Local Similarity 97.5%;
Matches 155; Conservative
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Best 1
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Q9SC10;
01-MAY-2000
01-MAY-2000
01-JUN-2000
                             Q9SCH9 PRELIMINARY; PRT;
Q9SCH9;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequ
01-JUN-2000 (TrEMBLrel. 14, Last anno
POLLEN, ALLERGEN BETV1, ISOFORM AT45.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Som Leberl K., Scheiner O., Breiteneder H.;

"New Bet v 1 isoforms including a naturally occurring of the protein derived from Austrian birch pollen.";

Mol. Immunol. 36:639-645(1999).

EMBL; AJ006908; CAA07323.1; -.

INTERPRO; IPRO00916; -.
                   BETV1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PFAM; PF00407; Bet_v_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS, BETVI; 1.
SEQUENCE 160 AA; 17572 MW; 99A3581E5B3A03FB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Betula verrucosa (White birch) (Betula Eukaryota; Viridiplantae; Embryophyta; Magnollophyta; eudicotyledons; Rosidae;
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 Betula
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
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                                                                                                                                                                                                                        HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
                                                                                                                                                                                                                                                                                           GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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(White
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                                 . 13, Last sequence update)
. 14, Last annotation updat
ISOFORM AT45.
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Pred. No. 6.7e-61;
2; Mismatches 2
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Fagales;
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Best Local S
Matches 155
                                                                                MENDEL; 30888; Betve;1174;30888.

INTERPO; IPRO00915; -.

PFAM; PRO0407; Bet_v_I; 1.

PRINTS; PRO0634; BETALLERGEN.

PROSITE; PS00451; PATHOGENESIS_BETVI; 1

PRODOM; PD000531; -; 1.

Pathogenesis-related protein.

SEQUENCE 160 AA; 17558 MW; 4200581E.
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01-FEB-1997
01-JUN-2000
                                                                                                                                                                                                                        PROTEIN.
EMBL; Z80100; CAB02155.1;
HSSP; P15494; 1ETV.
                                                                                                                                                                                                                                                                            Submitted (SEP-1996) to -!- SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q96365;
Q96365;
                                                                                                                                                                                                                                                                                                            TISSUE-POLLEN
Larsen J.N.;
                                                                                                                                                                                                                                                                                                                                                                                                Betula verrucosa (White birch) (Betula pendula).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta;
Magnoliophyta; eudicotyledons; Rosidae; eurosids I; I
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EMBL; AJ06910; CAA07325.1; -.
INTERPRO; IPR000916; -
PFAM; PF00407; Bet_v_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSTTE; PS00451; PATHOGENESIS_BETVI; 1.
SEQUENCE 160 AA; 17615 MW; 5A2A67BCCC45CA3E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Friedl-Hajek R., Radauer C., Riordain G., Ho
Leberl K., Scheiner O., Breiteneder H.;
"New Bet v lisoforms including a naturally
of the protein derived from Austrian birch I
                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                  Betulaceae;
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01-FEB-1997 (TIEMBLIE1.
01-JUN-2000 (TIEMBLIE1.
POLLEN ALLERGEN BET V 1.
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Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
Detulaceae; Betula.
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155; Conser
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THE BETVI FAMILY OF
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Pred. No. 6.7e-61;
3; Mismatches 1
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Score 803; DB 10;
Pred. No. 8.1e-61;
3; Mismatches 2
                                                                                     4200581E49B893E9
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  Submitted (SEP-1 -!- SIMILARITY: PROTEIN.
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01-MAY-2000
01-JUN-2000
ISOALLERGEN
                                                                                 SEQUENCE FROM TISSUE=POLLEN Larsen J.N.;
                                                                                                                                                                                                                                                                                                                                                                                                                       Q96368;
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01-FEB-1997 (TrEMBLrel. 02, Last sequence)
01-JUN-2000 (TrEMBLrel. 14, Last annotate)
POLLEN ALLERGEN BET V 1.
POLLEN ALLERGEN BET V 1.
Betula verrucosa (White birch) (Betula petula petu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Son D.Y., Haustein D., Vieths "Cloning and characterization allergen Bet v 1.";
Submitted (JAN-1999) to the EMBL; AR124838; AAD26561.1;
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Eukaryota; Viridiplantae; Embryophyta; Tracheophyta;
Magnoliophyta; eudicotyledons; Rosidae; eurosids I; 1
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PFAM; PF00407; Bet_v_I; 1.
PRINTS; PR00634; BETALLERG
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e; eurosids I; F:
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                             databases.
F PATHOGENESIS-RELATED
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Fagales;
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01-MAY-2000
01-JUN-2000
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INTERPRO; IPRO00916; -.
PFAM; PF00407; Bet_VI; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PACHOGENESIS_BETVI;
PRODOM; PD000531; -; 1.
                                                                                                                                                   PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS.
SEQUENCE 160 AA; 17520 MW;
                                                                                                                                                                               PFAM;
                                                                                                                                                                                       Mol. Immunol. 35:639-645(1999).
EMBL; AJ006904; CAA07319.1; -.
INTERPRO; IPR009916; -.
                                                                                                                                                                                                                Friedl-Hajek R.; Radauer C., Riordain G., Hoffmann-Son Leberl K., Scheiner O., Breiteneder H.; Leber W. Bet v. 1 isoforms including a naturally occurring of the protein derived from Austrian birch pollen.";
                                                                                                                                                                                                                                                                                      Betula verrucosa (White birch) (Betula Eukaryota; Viridiplantae; Embryophyta; Magnoliophyta; audicotyledons; Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL;
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P15494; 1BTV.
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-2000 (TIEMBLIFEL 13, Last seq
-2000 (TIEMBLIFEL 14, Last ann
ALLERGEN BETV1, ISOFORM AT10.
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                                                                                                                                                                                                                                                                                 Betula.
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17466 MW;
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97.5%;
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97.5%;
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Pred. No. 1.2e
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                                                                                                                DB 10;
.2e-60;
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Best Local Similarity 96.3
Matches 153; Conservative
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01-MAY-2000 (TrEMBLrel. 1
01-JUN-2000 (TrEMBLrel. 1:
ISOALLERGEN BET V 1 B1.
BETV1B1.
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Q9SYW0;
01-MAY-2000
01-MAY-2000
01-JUN-2000
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Q9SCI3;
Q1-MAY-2000 (TrEMBLrel. 13, Created)
Q1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
Q1-JUN-2000 (TrEMBLrel. 14, Last annotation update)
POLLEN ALLERGEN BETV1, ISOFORM AT8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Son D.Y., Haustein D., Vieths S.;
"Cloning and characterization of isoforms of the major k
allergen Bet v 1.";
Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases
EMBL; AF124837; AAD26560.1; -.
INTERPRO; IPR000916; -.
PFAM; PF00407; Bet v_I; 1.
PFAM; PF00407; Bet v_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
INTERPRO: IPRO00916; -. PFAM; PF00407; Bet_v: 1. PFAM; PF00407; Bet_v: 1. PRINTG; PR00634; BETALLERGEN. PROSITE; PS00451; PATHOGENESIS. SEQUENCE 160 AA; 17588 MW;
                                                                                                                                Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Son Leberl K., Scheiner O., Breiteneder H.;
"New Bet v 1 isoforms including a naturally occurring of the protein derived from Austrian birch pollen.";
Mol. Immunol. 36:639-645(1999).
EMBL; AJ006903; CAA07318.1; -.
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Eukaryota; Viridiplantae; Embryophyta; 1
Magnoliophyta; eudicotyledons; Rosidae;
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Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
                                                                                                                                                                                                                                                                                                    TISSUE-POLLEN;
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                                                                                                                                                                                                                                                                                                                                                                              Betulaceae;
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Betulaceae; Betula.
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Pred. No. 1.5e-60;
4; Mismatches 2;
_BETVI; 1.
5715581E49A223E9 CRC64;
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Tracheophyta; Spermatophyta;
; eurosids I; Fagales;
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Matches 153; Conser
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                                                              GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY
                                GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVTTPDGGCVLKISNKY 121
                                                                                               Conservative
                                                                                                       97.6%;
                                                                                               Score.799; DB 10;
Pred. No. 1.8e-60;
3; Mismatches 3;
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"Isoforms of Bet v 1, the major birch pollen allergen, analyzed liquid chromatography, mass spectrometry, and cDNA cloning.";
J. Biol. Chem. 270:2607-2613(1995).
-i- SUBCELLULAR LOCATION: CYTOPLASMIC.
-i- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE,
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INTERPRO; IPRO00916; -.

PFAM; PF00407; Bet_V_I; 1.

PRINTS; PR00634; BETALLERGEN.

PROSITE; PS00451; PATHOGENESIS_BETVI;
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-!- SUBCELLULAR LOCATION: CYTOPLASMTO
use by non-prefit institutions as long modified and this statement is not removed: entitles requires a license agreement (See or send an email to license@isb-sib.ch).
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HSSP; P15494; 1BTV.
INTERPRO; IPRO00916; -.
PFAM; PF00407; Bet_v_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
Pathogenesis-related protein; Allergen; Mu
INTI_MET 0
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Swoboda I., Jilek A., Ferreira F., Engel E., HOIIMGH., Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E., Scheiner O., Heberle-Bors E., Ahorn H., Breitenbach M.; Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.; "Isoforms of Bet v 1, the major birch pollen allergen, analyzed liquid chromatography, mass spectrometry, and cDNA cloning."; J. Biol. Chem. 270:2607-2613(1995).

J. Biol. Chem. 270:2607-2613(1995).
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PRINTS; E PROSITE;
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           INTERPRO; IPRO00916; -.
PFAM; PF00407; Bet_v_I; 1.
PRINTS; PR00634; BETALLERGEN
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Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
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                                                     X77268; CAA54484.1;
X77274; CAA54490.1;
P15494; IBTV.
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 PATHOGENESIS_BETVI;
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                  INTERPRO; 1FXVVVLLY, 1. 1.

PFAM; PF00407; 3etv_I; 1.

PRINTS; PR00634; BETALLERGEN.

PROSITE; PS00451; PATHOGENESIS_BETVI; 1.

PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
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                                                                            EMBL; X77266; CAA54482.1;
EMBL; X77270; CAA54486.1;
HSSP; P15494; 1BTV
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Eukaryota; Viridiplantae; Embryophyta; Tracheophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae
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01-NOV-1995 (Rel. 32, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
MAJOR POLLEN ALLERGEN BET V 1-D/H (BET V I-
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                       Multigene
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HSSP; P15494; 1BTV.
INTERPRO; IPR000916; -.
PERM; PF00407; Bet_v_I; 1.
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PROSITE; PS00451; PATHOSENESIS_BETVI; 1.
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Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
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PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
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Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
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         POLLEN
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41; Conservative
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         ALLERGEN
                                                                                                              STANDARD;
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Pred. No. 1.7e-57;
8; Mismatches 10
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Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophy
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids
                        SEQUENCE FROM N.A.,
                                                                 Fagales;
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Query Match
Best Local S
Matches 140
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PAM; PF00407; Bet_V_I; 1.

PRINTS; PR00634; BETALLERGEN.

PROSITE; PS00451; PATHOCENESIS BETVI; 1.

PROSITE; PS00451; PATHOCENESIS BETVI; 1.
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01-NOV-1995 (Rei. 32, Created)
01-NOV-1995 (Rei. 32, Last sequence update)
01-NOV-1997 (Rei. 35, Last annotation update)
MAJOR POLLEN ALLERGEN BET V 1-K (BET V I-K).
                                                    BV1K_BETVE
P43184;
                                                                                BETVE
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Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
Fagales; Betulaceae; Betula.
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-:- SUBCELLULAR LOCATION: CYTOPLASMIC.
MEDLINE; 95155322.

Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E., Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;

"Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography, mass spectrometry, and cDNA cloning.";
J. Biol. Chem. 270:2607-2613(1995).

"I., SUBCELLULAR LOCATION: CYTOPLASMIC.
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HSSP; P15494; 1BTV.
INTERPRO; IPR000916; -.
PFAM; PF00407; Bet_V_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
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P43176;
01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence up
01-NOV-1997 (Rel. 35, Last annotation
MAJOR POLLEN ALLERGEN BET V 1-C (BET V
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Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
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Swoboda I., Jilek A., Ferreira F.,
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Pred. No. 1.3e-56;
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01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
MAJOR POLLEN ALLERGEN ALN G 1 (ALN G I).
Alnus glutinosa (Alder).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta;
Eukaryota; Viridiplantae; Embryophyta; Rosidae
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the Euro
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HSSP;
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                                                                                          Kraft D., Scheiner O.;

"Complementary DNA cloning and expression in Esche
g I, the major allergen in pollen of alder (Alnus
J. Allergy Clin. Immunol. 90:909-917(1992).

-i. DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS
-i. DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS
- AMERICA AND USSR.

-i. SIMILARITY: BELONGS TO THE BETVI FAMILY OF PAI
                                                                                                                                                                                        Breiteneder H., Ferreira F., Reikerstorfer A., Duchene M.,
Valenta R., Hoffmann-Sommergruber K., Ebner C., Breitenbach
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PFAM; PF00407; Bet_V_I; 1.
PRINTS; PRO0634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
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                                                                                                                                                                                                                                  TISSUE-POLLEN;
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European Bioinformatics Institute
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Best Local S
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01-FEB-1995
01-FEB-1995
01-NOV-1997
  Allergen;
INIT_MET
SEQUENCE
                                                           EMBL; X66933; CAA47367.1; -.
HSSP; P15494; 1BTV.
INTERPRO; IPR000916; -.
PFAM; PF00407; Bet_v_i; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
                                                                                                                                                                                                                      use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an entitles requires a license agreement (see http://www.isborsend an email to license@isb-sib.ch).
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"PCR based cloning and sequencing of isogenes encoding pollen major allergen Car b I from Carpinus betulus, hc Mol. Immunol. 29:703-711(1992).

-i- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EU
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MAJOR POLLEN ALLERGEN CAR B 1, ISOFORM
Carpinus betulus (Hornbeam).
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Magnoliophyta; eudicotyledons; core eud
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INIT_MET 0 BY SIMILARITY.
SEQUENCE 159 AA; 17207 MW; 8DCFB96C680688A6
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28; Conservative
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Query Match Best Local Similarity

75.9**%**; 73.0**%**;

Score Pred.

Matches

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                                                                                                                                                                                                                                                                                                    "PCR based cloning and sequencing of isogenese encoding pollen major allergen Car b I from Carpinus betulus, hc Mol. Immunol. 29:703-711(1992).

-i- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EU
                                                                                                                                                                                                                                                                                                                                                                                                                   Carpinus betulus (Hornbeam).
Eukaryota; Viridiplantae; Embry
Magnoliophyta; eudicotyledons;
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PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
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-!- SIMILARITY: BELONGS TO THE BETVI FAMI
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                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                           Fagales; Betulaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     MAJOR POLLEN ALLERGEN CAR B 1,
                                                                                                INTERPRO; IPR009916; -.
PFAM; PF00407; Bet_v_I;
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                                                                                                                     X66932; CAA47366.1;
X66918; CAA47357.1;
P15494; 1BTV.
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                                                                                                                                                                  an email to license@isb-sib.ch).
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                                                               Pathogenesis-related
                                                                                                                                                                                                                                                                                                                                                                                                                                                              (Rel. 31, Rel. 35, Rel. 35,
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Embryophyta; Tracheophyta; Spermatophyta;
Aons: core eudicots; Rosidae; eurosids I;
        ted protein; Multigene f
BY SIMILARITY.
V -> A (IN ISOFORM 1B)
I -> S (IN ISOFORM 1B)
K -> E (IN ISOFORM 1B)
W; 21DCD17A38851E8E CRC
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BETVI FAMILY OF
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.1e-49;
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EMBL; X70997; CAA50325.1
EMBL; X70998; CAA50326.1
P1R; S30053; S30053
HSSP; P15494; IBTV.
INTERPRO; IPRO00916; -.
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CORAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MPAA_CORAV STANDARD; PRT; 159 AA. 008407; 01-OCT-1994 (Rel. 30, Created) 01-FEB-1995 (Rel. 31, Last sequence update) 01-NOV-1997 (Rel. 35, Last annotation update) MAJOR POLLEN ALLERGEN COR A 1, ISOFORMS 5, 6,
                        VARIANT
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Corylus avellana (European hazel).

Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnollophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
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                    V -> A (IN CLONE COR A 1/11).
P -> T (IN CLONE COR A 1/11).
P -> S (IN CLONE COR A 1/16).
E -> G (IN CLONE COR A 1/16).
T -> K (IN CLONE COR A 1/6 AND 1/16).
H -> S (IN CLONE COR A 1/6 AND 1/16).
I -> T (IN CLONE COR A 1/16).
I -> T (IN CLONE COR A 1/16).
                        対エ用エロららへ
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    CRC64;
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Query Match Best Local Similarity

74.6%; 71.7%;

Score Pred.

610; DB 1; No. 1.4e-46;

Length 159

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121 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 159
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         GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 120
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Search completed: December 11, 2000, 10:43:18 Job time: 110 sec

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Title:
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Maximum Match 100%
Listing first 45 summaries
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SPTREMBL_14:*

1: sp_archea:*
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Gapop 10.0 , Gapext 0.5
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818
1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159
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sp_phage:*
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sp_bacteria:*
sp_fungi:*
    sp_rodent:*
sp_virus:*
sp_vertebrate:*
sp_unclassified:*
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sp_invertebrate:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

### SUMMARIES

Result No.	Score	Query Match I	Length	BB	IJ	Description
-	809	98.9	160	10	Q96366	Q96366 betula verr
N	. 807	98.7	160	10.	024642	betula :
ω	805	98.4	160	10	Q42499	_
4	803	98.2	160	10	023752	2 betula
ហ	802	98.0	160	10	Q96371	Q96371 betula verr
თ	801	97.9	160	10	Q9SCH8	8 betula
7	800	97.8	160	10	Q96370	0 betula
œ	799	97.7	160	10	Q9SCI0	0 betula
9	799	97.7	160	10	Q9SCH9	betula
10	798	97.6	160	10	Q96365	betula
11	798	97.6	160	10	Q9SYW1	betula
12	796	97.3	160	10	Q96368	
13	796	97.3	160	10	Q9SCI2	betula
14	795	97.2	160	10	Q9SYW0	betula
15	794	97.1	160	10	Q9SCI3	_
16	793	96.9	159	10	023748	betula
17	793	96.9	160	10	Q96367	betula
18	793	96.9	160	10	023753	023753 betula verr
ō	791	96.7	160	5	023754	

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622	629	638	639	640	659	683	695	695	869	702	731	735	736	738	739	746	768	770	777	782	783	784	787	788	790
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Q96503	Q96379	Q96377	Q96381	Q96378	Q96382	Q39425	Q39453	Q39430	Q39420	Q39417	Q39427	023747	Q39428	023749	Q39429	Q9ZS38	023750	Q9SCH6	023746	Q39431	Q9SCH5	Q9ZS39	Q9SYW2	023751	94
Q96503 carpinus		carp	Q96381 carpinus					Q39430 betula			Q39427 betula	O23747 betula	Q39428 betula			Q9zs38 betula	023750 betula	Ř.		Q39431 betula		Q9zs39 betula	Q9syw2 betula	Ď,	Q39426 betula
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# ALIGNMENTS

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1 GVENYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60	Query Match Best Local Similarity 98.1%; Pred. No. 8.4e-62; Matches 156; Conservative 1; Mismatches 2; Indels 0; Gaps 0;	Pathogenesis related protein. SEQUENCE 160 AA; 17557 MW; B2174110A9588AD4 CRC64;	PRODOM; PD000531; -; 1.	EN.	INTERPRO: IPROUUSI6; PFAM; PF00407; Bet_v_I; 1.	MENDEL; 30889; Setve; 1174; 30889.	P15494; 18TV.	EMBL; Z80101; CAB02156.1;		-I- STMITABITY BRIONGS TO THE BREVE BRANK/DUBU CHEMBERS.	Larsen J.N.;	TISSUE-POLLEN OSTAINED FROM ALLERGON, SWEDEN;	SEQUENCE FROM N.A.	[1]		Eukaryota; viriurbiantae; Emeryophyta; riadheophyta; speimatophyta; Magnoliophyta: endiootyledons: Rosidae: enrosida I: Fagales:	Betula verrucosa (White birch) (Betula pendula).	POLLEN ALLERGEN BET V 1.	(TrEMBLrel. 14, Last	01-FEB-1997 (TrEMBLIc1. 02, Last sequence update)	יייייייייייייייייייייייייייייייייייייי	Q96366 PRELIMINARY; PRT; 160 AA.	1

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RESULT
Q42499
ID Q42499
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Best Local S
Matches 156
                                                                                                                                                                                                 Q42499
Q42499;
Q1-NOV-1996 (Tremblrel. 0:
01-NOV-1996 (Tremblrel. 0:
01-JUN-2000 (Tremblrel. 1:
MAJOR ALLERGEN BET V 1:
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EMBL; AJ002107; CAA05187.1; -.
HSSP; P15594; LBTV.
MENDEL; 24383; Betve;1174;24383.
LNTERPRO; LPR000916; -.
PFAM; PF00407; Bet__1; 1.
PRINTS; PR00634; BETALLERGEN.
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O24642;
O1-JAN-1998 (TrEMBLrel.
O1-JAN-1998 (TrEMBLrel.
O1-JUN-2000 (TrEMBLrel.
POLLEN ALLERGEN BETV1.
BETV1.
                                                                           Eukaryota; Viridiplantae; Embr; Magnoliophyta; eudicotyledons; Betulaceae; Betula.
                                                      Betulaceae; [1]
                                                                                                                                                     BETV1.
Betula verrucosa (White
  TISSUE-LEAF;
                            SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., Riordain G., Scheiner O., Breiteneder H.; Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Betula verrucosa (White birch) (Betula
Eukaryota; Viridiplantae; Embryophyta;
Magnoliophyta; eudicotyledons; Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pathogenesis-related protein.
SEQUENCE 160 AA; 17589 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE; PS00451; PATHOGENESIS_BETVI; PRODOM; PD000531; -; 1
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98.1%;
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14,
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Embryophyta; T
edons; Rosidae;
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; Pred. No. 1.2e
1; Mismatches
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Last sequence up
Last annotation
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eurosids I; F
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Tracheophyta;
eurosids I; F
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Fagales;
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SO DE RESERVA
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Best Local Similarity
Matches 156; Conserv
MENDEL; 26841; Retve;1174;26841.
INTERPRO; IPRO00916; -.
PFAM; PF00407; Ket_v_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BE
PRODOM; PD000531; -; 1.
                                                                                                                                                                                                                                                                                                                                                                023752
023752;
01-JAN-1998
01-JAN-1998
01-JUN-2000
                                                                                                                                        TISSUE=POLLEN;
Fried1-Hajek R., Radauer C., Hoffmann-Sommergruber Fried1-Hajek R., Radauer C., Hoffmann-Sommergruber Fried1-Hajek R., Scheiner O., Breiteneder H.;
Submitted (OCT-1997) to the EMBL/GenBank/DDBJ datal Submitted (OCT-1997) to The BETVI FAMILY OF PATI
                                                                                                                                                                                                                                                                                 Betula verrucosa (White birch) (Betula pendula).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta;
Magnoliophyta; eudicotyledons; Rosidae; eurosids I; i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS; PRO0634; BETALLERGEN.
PROSTIE; PSO0451; PATHOGENESIS_BETVI;
PRODOM; PD000531; -; 1.
Pathogenesis_related protein.
SEQUENCE 160 ÅA; 17541 MW; E395041
                                                                                                    EMBL; AJ002108; CAA
HSSP; P15494; 1BTV.
                                                                                                                                                                                                                                     SEQUENCE FROM
                                                                                                                                                                                                                                                                    Betulaceae;
                                                                                                                                                                                                                                                                                                                                                    POLLEN ALLERGEN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (JUN-1998) to -!- SIMILARITY: BELONGS
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Leberl K., Scheiner O., Breiteneder
"New Betvl isoforms including a natu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hoffmann-Sommergruber K.; Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases
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Gremblrel.
Gremblrel.
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   PATHOGENESIS_BETVI; -; 1.
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) to the EMEL/GenBank/DDBJ databases.
)NGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
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98.1%;
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teneder H.;
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Pred. No. 1.8e-61;
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Fagales;
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Best Local S
Matches 156
                                                                                                                                                         Query Match
Best Local Similarity
Matches 156; Conser
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Q96371;
O1-FEB-1997
O1-FEB-1997
Q9SCH8;
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Betula vertucosa (White birch) (Betula pendula).

Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Magnollophyta; eudicotyledons; Rosidae; eurosids I; i
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PFAM; PF00407; Bet_v_I; 1.
PRINTS; PRO0634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI;
PRODOM; PD000531; -; 1.
PRODOM; PD000531; -; 1.
                                                                                                                                                                                                                                                               EMBL; Z80106; CAB02161.1; -. HSSP; P15494; 1BTV. MENDEL; 30893; Betve;1174;30893
                                                                                                                                                                                                   Pathogenesis-related protein. sequence 160 AA; 17670 MW;
                                                                                                                                                                                                                                                                                                 Submitted (SEP-1996) to -!- SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
TISSUE-POLLEN OBTAINED
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                                                                                              GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                              (TrEMBLrel. 02, Created)
(TrEMBLrel. 02, Last sequence update)
(TremBLrel. 14, Last annotation update)
                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                      Betula
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          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d protein.
17523 MW;
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                                                                                                                                                                 98.0%;
98.1%;
                                                                                                                                                                                                                                                                                                                            FROM
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                                                                                                                                                                                                                                                                                                  THE BETVI FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 803; DB Pred. No. 2.7e 0; Mismatches
                                                                                                                                                        Score 802; DB Pred. No. 3.3e 0; Mismatches
                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                           EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                            ALLERGON,
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          PRT;
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                                                                                                                                                                                                    69B4410BBA6A1AC6 CRC64;
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2.7e-61;
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.3e-61;
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Fagales;
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Best Local S
Matches 154
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Q96370;
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Fried1-Hajek R., Radauer C., Riordain G., Hoffmann-Sommer Leberl K., Scheiner O., Breiteneder H.;

"New Bet v 1 isoforms including a naturally occurring tru of the protein derived from Austrian birch pollen.";

MOL. Immunol. 36:639-645(1999).

REMBL; AJ006911; CAA07326.1; -.

REMBL; AJ006911; CAA07326.1; -.

REMBL; AJ006916; -.

REMBL; PRO0407; Bet_v_I; 1.

REMBL; PRO0407; Bet_v_I; 1.
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01-MAY-2000 (TrE)
01-JUN-2000 (TrE)
POLLEN ALLERGEN |
                                                                                                                                      PROTEIN.
EMBL; Z80105;
HSSP; P15494;
                              PEAM, PF00407; Betwit 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS.
PRODOM; PD000531; 7; 1
                                                                                                                                                                                                                                                                                                                POLLEN ALLERGEN BET V 1.
Betula verrucosa (White birch) (Betula EBetula verrucosa (White birch) (Betula EBukaryota, Viridiplantae; Embryophyta; Tukaryota; Viridiplantae; Embryophyta; Magnoliophyta; eudicotyledons; Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                     01-FEB-1997
01-JUN-2000
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Eukaryota; Viridiplantae; Embryophyta; '
Magnoliophyta; eudicotyledons; Rosidae;
Pathogenesis-related protein. SECHENCE 160 AA; 17541 MW;
                                                                                                    EMBL; Z80105; CAB02160.1; -.
HSSP; P15494; 1BTV.
MENDEL; 30892; Betve;1174;30892.
INTERPRO; IPRO009916; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Magnoliophyta; eudicotyledons; Betulaceae; Betula.
                                                                                                                                                                                         Submitted (SEP-1996) to -!- SIMILARITY: BELONGS
                                                                                                                                                                                                             Submitted (SEP-1996)
                                                                                                                                                                                                                                                                                                                                                                                                                         01-FEB-1997
                                                                                                                                                                                                                              Jarsen J.N.;
                                                                                                                                                                                                                                              TISSUE-POLLEN
                                                                                                                                                                                                                                                                                                 Betulaceae;
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-2000 (TrEMBLrel.
ALLERGEN BET V 1.
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(TIEMBLrel. 13, Last sequence up
(TIEMBLrel. 14, Last annotation
RGEN BETV1, ISOFORM AT50.
                                                                                                                                                                                                                                                                                                   Betula.
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96.9%;
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Pred. No. 4e-61;
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                                                    _BETVI;
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 D8AF110BBD1CDADB CRC64;
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Fagales;
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Best Loc
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Q9SCH9;
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01-MAY-2000 (TrEMBLrel. 13, L
01-JUN-2000 (TrEMBLrel. 14, L
POLLEN ALLERGEN BETV1, ISOFOR
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Q9SCIO;
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POLLEN ALLERGEN I
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PFAM; PF00407; Bet_v_I; 1.
PRINTS; PRO0634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SEQUENCE 160 AA; 17572 MW; 99A3581E5B3A03FB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Friedl-Hajek R., Radauer C., Riordain G., Hoffmann Leberl K., Scheiner O., Breiteneder H.; "New Bet v 1 isoforms including a naturally occurr of the protein derived from Austrian birch pollen. Mol. Immunol. 36:639-645(1999).

EMBL: AJ006908; CAA07323.1; -.
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RGEN BETV1, ISOFORM AT37.
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96.98;
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97.5%;

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birch)
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Query Match Best Local S Matches 153

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Score 798; DB 10; Pred. No. 7.2e-61; 3; Mismatches 3

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CC -!- SIMILARITY: BELONGS TO THE BETVI F.
CC PROTEIN.
REMBL; 280100; CAB02155.1; -.
R HSSP; P15494; 1ETV.
R MENDEL; 30888; Betve;1174;30888.
R MENDEL; 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 154
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Leberl K., Scheiner O., Breiteneder H.;
"New Bet v 1 isoforms including a naturally occurr:
of the protein derived from Austrian birch pollen."
Mol. Immunol. 36:639-645(1999).
MBL, AJ006910; CAA07325.1; -.
INTERPRO; IPR000910; -.
INTERPRO; IPR000910; -.
PFAM, PF00407; Bet_v_I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SEQUENCE 160 AA; 17615 MW; 5AZA67BCCC45CA3E CRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q96365;
Q96365;
01-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POLLEN ALLERGEN BET V 1.

Betula verrucosa (White birch) (Betula pendula).

Eukaryota, Viridiplantae, Embryophyta; Tracheophyta;

Eukaryota, Viridiplantae, Embryophyta; eurosids I; I

Magnoliophyta; eudicotyledons; Rosidae; eurosids I; I
                                                                                                                                           Pathogenesis-related SEQUENCE 160 &A; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-FEB-1997
01-JUN-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE=POLLEN
Larsen J.N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Betulaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE=POLLEN;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7 (TrEMBLIEL. 02, 07 (TrEMBLIEL. 02, 18) (TrEMBLIEL. 14, 18) ERGEN BET V 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Betula.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N/A.
OBTAINED FROM ALLERGON,
                                                                                                                                           d protein.
17558 MW;
97.6%;
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; Pred. No. 5.9e
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL/GenBank/DDBJ
THE BETVI FAMILY OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence up
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                                                                                                                                               4200581E49B893E9 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SWEDEN
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5.9e-61;
2;
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on update)
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Fagales;
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Best Local S
Matches 155
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"Cloning and characterization o
allergen Bet v 1.";
submitted (JAN-199) to the EMB
EMBL; AF124838; AAD26561.1; -.
INTERPRO; IPR000916; -.
PFAM; PF00407; Bet_v_1; 1.
PRAMTS; PR00634; BETALLERGEN.
                                                                                                                                                                                                                                                        Q96368;
Q96368;
O1-FEB-1997
O1-FEB-1997
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01-MAY-2000
01-MAY-2000
01-JUN-2000
ISOALLERGEN 1
    Larsen J.N.;
Submitted (SEP-1996) to
-i- SIMILARITY: BELONGS
PROTEIN.
                                                                             SEQUENCE FROM N.A.
TISSUE-POLLEN OBTAINED
                                                                                                                                                         Betula verrucosa (White birch) (Betula pendula).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta;
Magnoliophyta; eudicotyledons; Rosidae; eurosids I; i
                                                                                                                                                                                                                 01-FEB-1997 (TIEMBLIE) 02, Created)
01-FEB-1997 (TIEMBLIE) 02, Last sequence up
01-JUN-2000 (TIEMBLIE) 14, Last annotation
POLLEN ALLERGEN BET V 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Betula verrucosa (White birch) (Betula Eukaryota; Viridiplantae; Embryophyta; Magnoliophyta; eudicotyledons; Rosidae;
                                                                                                                                         Betulaceae;
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hes 155;
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O (TrEMBLrel. 13, 1)
O (TrEMBLrel. 14, 1)
N BET V 1 B2.
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                                                                                                                                         Betula.
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                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
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A; 17565 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           97.6%;
                                                                               FROM
                      To 1
                      THE
                                                                               ALLERGON,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
Last sequence up
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                      EMBL/GenBank/DDBJ
HE BETVI FAMILY OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
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                                                                               SWEDEN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 10;
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Best Local
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Leberl K., Scheiner O., Breiteneder H.;
"New Bet v 1 isoforms including a naturally oc.
of the protein derived from Austrian birch pol.
Mol. Immunol. 36:639-645(1999).
Mol. Immunol. 36:639-645(1999).
EMBL; AJ006904; CAA07319-1; -.
INTERPRO; IPR000916; -.
INTERPRO; IPR000916; -.
PFAMM; PF00407; Set_v_I; 1.
PRONSITE; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SEQUENCE 160 AA; 17520 MW; EB3128ED2A630A2:
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01-MAY-2000 (TIEN
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POLLEN ALLERGEN I
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PROSITE; PS00451; PATHOGENESIS_BETVI;
PRODOM; PD000531; -; 1.
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INTERPRO; IPR000916; -.
PFAM; PF00407; Bet_v_I; 1.
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P15494; 1BTV.
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(TrembLrel. 13, Last sequence up
(TrembLrel. 14, Last annotation
RGEN BETV1, ISOFORM AT10.
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                                                                                                                       Conservative
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17466 MW;
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                                                                                                                       Score 796; DB Pred. No. 1.1e 1; Mismatches
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eurosids I; F
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Matches 152; Conserv
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Q9SYW0;
01-MAY-2000
01-MAY-2000
01-JUN-2000
ISOALLERGEN
Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber I Leberl K., Scheiner O., Breiteneder H.;
"New Bet v 1 isoforms including a naturally occurring truncated of the protein derived from Austrian birch pollen.";
Mol. Immunol. 36:639-645(1999).
EMBL; AJ006903: CAAO7318:1; -.
INTERPRO; IPR000916; -.
INTERPRO; IPR000916; -.
PFAM; PF00407; Bet v.I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PACHOGENESIS_BETVI; 1.
SEQUENCE 160 AA; 17588 MW; 5715581E49A223E9 CRC64;
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Q9SCI3;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2000 (TrEMBLrel. 14, Last annotation updat
POLLEN ALLERGEN BETV1, ISOFORM AT8.
BETV1
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INTERPRO; IPR000916; -.
PEAM; PF00407; Bet v.I; 1.
PRINTS; PR00634; BETALLERGEN.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
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"Cloning and characterization of isoforms of the major lallergen Bet vi.";
Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases EMBL; AF124837; AAD26560.1; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Betula verrucosa (White birch) (Betula pendula).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
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Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnollophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
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(TrEMBLrel. 13, Last sequence update)
(TrEMBLrel. 14, Last annotation update)
BET V 1 B1.
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L.3e-60;
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                                      GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVTTPDGGCVLKISNKY
                                                                         GVFNYETETTSVIPAARLEKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE
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95.6%;
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Search completed: Job time: 110 sec December 2000, 10:43:04

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Result
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB
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US-08-363-010-1
US-08-363-010-1
US-08-199-219-6
US-08-459-0251-8
US-08-459-0251-12
US-08-323-170B-2
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US-08-669-378-12
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Sequence 8, Appl
Sequence 8, Appl
Sequence 12, Appl
Sequence 12, Appl
Sequence 12, Appl
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Sequence 30, Appl
Sequence 17, Appl
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Contract of	Secuence 5	Sequence 5,	Sequence 2,	Sequence 2,	Sequence 8,	Sequence 37,	Sequence 2,	Sequence 2,	Sequence 2,		Sequence 26,	Sequence 26,	Sequence 2,	Sequence 2,	Sequence 2,	Sequence 12,	Sequence 4,
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#### ALIGNMENTS

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RESULT 1
US-07-847-010-23
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847,010
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REGISTRATION NUMBER: 30,280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL
                                                                                                                                          TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO:
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APPLICANT:
                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 65
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
TITLE OF INVENTION: Applications Thereof
NUMBER OF SEQUENCES: 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
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                HYPOTHETICAL: NO ORIGINAL SOURCE:
                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 160 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                              TOPOLOGY: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711
                                                                                                                                                                             TELEFAX:
 ORGANISM:
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Valenta, Rudolf
Hoffmann - Sommergruber, Karin
birch (Betula sp.)
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Rumpold, Helmut
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                             .. peptide
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US-07-847-010-3

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TELEFAX: (212) UNITELEFAX: (214) UNITELEFAX: 66141 PENNIE INFORMATION FOR SEQ ID NO: 3: SEQUENCE CHARACTERISTICS: LENGTH: 160 amino acids TYPE: amino acid linear
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US-07-847-010-3
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Best Local
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                                                                                                                                                                                                                APPLICATION NUMBER: US/07/847,010
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
                 MOLECULE TYPE: peptide HYPOTHETICAL: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF
                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 65
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA:
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LIBRARY: POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
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OPERATING SYSTEM:
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ORGANISM:
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10036-2711
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1155 Avenue of the Americas
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Ferreira, Fatima
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Scheiner, Otto
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Valenta, Rudolf
Hoffmann - Sommergruber, Karin
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IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
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Alder (Alnus sp.)
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Applications Thereof
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Pred. No. 4.9e-82;
0; Mismatches 2
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RESULT 3
US-07-847-010-14
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                                                                                                                                             TELEFAX: (212) 869-974
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: JONES III, Harry C
REGISTRATION UNMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-
TELECOMMUNICATION INFORMATION:
TELEPHAN: (212) 790-9990
TELEPHAN: (212) 869-9741/8864
                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                            MOLECULE TYPE: PO
HYPOTHETICAL: NO
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: Allergens of Alder Pollen and TITLE OF INVENTION: Applications Thereof NUMBER OF SEQUENCES: 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
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                 MMEDIATE SOURCE:
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                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE: 01-JUN
                                ORGANISM:
                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: U.S.A. ZIP: 10036-2711
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 LIBRARY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
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                                                                                                               amino acid
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Hoffmann - Sommergruber, Karin
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POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
                           hazel (Corylus sp.)
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Ferreira, Fatima
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Pred. No. 1.9e-67;
2; Mismatches 19
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US-07-847-010-17
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Patent No. 5693495
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Best Local Similarity 72.3%;
Matches 115; Conservative
                                                                                                                                       INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                    COMPUTER KEALINGLE COMPUTER: IBM PC compatible COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                  CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20;
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
COMPUTER: IBM PC com
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                                                         MOLECULE TYPE: PO
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                                            ORIGINAL SOURCE:
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              ORGANISM: hazel (Corylus sp.)
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TELEX: 66141 PENNIE
                                                                                          TYPE: amino acid TOPOLOGY: linear
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FILING DATE: 01-JUN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE: New York COUNTRY: U.S.A. ZIP: 10036-2711
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                                                                                                                          LENGTH:
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                                                                                                                        160 amino acids
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Breitenbach, Michael
POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
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Best Local Similarity
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                                                                                                                                                         INFORMATION FOR SEQ ID NO: 11:
                                                                                                                                                                                                                                    CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,:
REFERENCE/DOCKET NUMBER:
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                                            ORIGINAL SOURCE
                                                         MOLECULE TYPE: .peptide
HYPOTHETICAL: NO
                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION: TELEPHONE: (212) 790-9090
              ORGANISM: haze
                                                                                                                                         SEQUENCE CHARACTERISTICS
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                                                                                                                                                        TELEFAX: (212,
TELEFAX: 66141 PENNIE
                                                                                            TOPOLOGY:
                                                                                                        TYPE: amino acid
                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/0:
FILING DATE: 01-JUN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: New York
                                                                                                                        LENGTH:
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Y: U.S.A.
                                                                                                                      160 amino acids
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POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
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                                                                                            linear
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72.3%;
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: ISM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
TITLE OF INVENTION: Applications Thereof
NUMBER OF SEQUENCES: 23
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5693495
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hazel (Corylus sp.)
                                                                                                                                                                                                            869-9741/8864
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RESULT 6
US-07-847-010-20
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                                                                                                                              TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                        TYPE: amino acids
TOPOLOGY: 1:---
(OLECUTO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                        MOLECULE TYPE: PORTIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
               IMMEDIATE SOURCE:
                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: 65
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/0:
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
                                                                                                                                                                                                                                     NAME: Jones III, Harry REGISTRATION NUMBER: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62
LIBRARY:
                           ORGANISM:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Reikerstorfer, Arnold
Valenta, Rudolf
Hoffmann - Sommergruber,
POLLEN FROM ALLERGON AB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ferreira, Fatima
FENTION: Allergens of Alder Pollen and
FENTION: Applications Thereof
FOURNESS: 23
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Kraft, Dietrich
                           hazel (Corylus sp.)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Breiteneder, Heimo
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                                                                     peptide
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71.78;
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                                                                                                                                                                                                                         6530-010
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Pred. No. 6e-60;
ENGELHOLM, SWEDEN
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RESULT 7
5312912-2
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US-08-363-010-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TITLE OF INVENTION: PROCEDURES AND REGULATORY DNA SEQUENCES;FOR GENETICALLY ENGINEERING DISEASE RESISTANCE AND OTHER;INDUCIBLE TRAITS IN PLANTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;Patent No. 5312912;
APPLICANT: HADWIGER, LEE A.;CHIANG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DANIEL A.
                                                                                                                                                                                        Sequence 1, Application US/08363010 Patent No. 5512484
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Best Local Similarity
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Best Local Similarity
                                                                                                                                  GENERAL INFORMATION:
APPLICANT: Yamamoto, Mika
APPLICANT: Oheda, Kenji
                                                                TITLE OF INVENTION: CATTITLE OF INVENTION: SANUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
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 STATE:
                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                 61 DGETKYYLHKVELYDDANWANNYSIVGGVGLPDTVEKISFEAKLSAGPNGGSIAKLSVKY 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
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                                                  ADDRESSEE:
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                                                                                                                                                                                                                                                                                           YTKGDAIPSEEEIKNGKAKGEGIFKALEGYCVANPD-YN 158
Falls Church
: Virginia
                                  E: Birch, Stewart, Kolasch & Birch, 8110 Gatehouse Road, Suite 500 East
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-JUN-1989
                                                                                                    CARROT 16 KD PROTEIN, GENE CODING FOR SAID PROTEIN AND PLASMID CONTAINING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     45.5%;
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71.18;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 372;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 603;
Pred. No. 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
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COMPUTER READABLE FORM: MEDIUM TYPE: Floppy

Floppy disk

COUNTRY: UZIP: 22042

U.S.A.

SOFTWARE: Patentin Rel

SYSTEM:

IBM PC compatible SYSTEM: PC-DOS/MS-DOS

Release #1.0, Version #1.30

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บร-08-911-434A-4
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                                                                                                                                                                                                                                                                                                                                                                              Patent No.
                                                                                                                                                                                                                                                                                                                                                                                 Sequence 4, Application US/08911434A Patent No. 5959176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
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TELEX: 248345
INFORMATION FOR SEQ ID NO: 1:
                 COMPUTER READABLE FORM:
MEDDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08/911,434A
FILING DATE: 12-AUG-1997
CLASSIFICATION: 800
                                                                                                                                                                                                                                                                                           APPLICANT: TORIKAI, Satomi
APPLICANT: OEDA, Kenji
TITLE OF INVENTION: PLANT PROMOTER AND UTILIZATION THEREOF
NUMBER OF SEQUENCES: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ANTI-SENSE: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: 20 TELECOMMUNICATION INFORMATION: TELEPHONE: (703) 205-8000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HYPOTHETICAL:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE:
     ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 HTKGDAVVPEENIKFADAQNTALFKAIEAYLIAN 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAH 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Daucuc
ORGANISM: Kuroda Gosun
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                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 GSPITSMTVRTDAVNKEALTYDSTVIDGDILLEFIESIETHMVVVPTADGGSITKTTAIF 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Svensson, Leonard R. REGISTRATION NUMBER: 30,330
                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 154 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/0 FILING DATE: 23-DEC-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 GAQSHSLEITSSVSAEKIFSGIVLDVDTVIPKAAPGAYKSVD-VKGDGGAGTVRIITLPE 60
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                                                                                                                                                                                                       ET: P.O. BOX 74
: FALLS CHURCH
E: VIRGINIA
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57; Conservative
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                                                                                                                                                                                         UNITED STATES OF AMERICA
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O. BOX 747
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NO
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                                                                                                                                                                                                                                                             KOLASCH &
                                                                                                                                                                                                                                                             BIRCH,
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; MOLECULE TYPE:
US-08-911-434A-4
                                                     Matches 57;
                                                                   Query Match
Best Local Similarity
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Best Local Similarity
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                                                                                                                                                                                         TYPE:
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                                                                                                                                                                        TOPOLOGY:
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Patent No. 6031151 5698768
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PRIOR APPLICATION DATA:
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOTTWARE: Patentin Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/08/
FILING DATE: 01 MARCH 1994
PRIOR APPLICATION DATA:
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REFERENCE/DOCKET NUMBER: 218
TELECOMMUNICATION INFORMATION:
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                                                                                                                                                                  amino acid
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1455 PENNSYLVANIA AVENUE, N.W.
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37.0%; Pred. No. 6.4e-23;
rative 31; Mismatches 65
29.3%; Score 240; DB 3; L6 36.5%; Pred. No. 4.3e-19; +ive 30; Mismatches 65;
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                                                                                                                                                                                                                                                                                                                                      US/08/199,219
                                                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/GB92/01602 FILING DATE: 02 SEPTEMBER 1992
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Best Local 9
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                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 669 amino acid
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NAME: KELLY, ROBIN D
REGISTRATION NUMBER: 34,
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CURRENT APPLICATION DATA:
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CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: CR
                                                                                                 216
 120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
                                260 MPNNMKDMLDVLEETS------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS--
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/0 FILING DATE: 16-DEC-1994 CLASSIFICATION: 435
                                                               63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
                                                                                                                                                                                Local
                                                                                                                                                                                                                                                            NAME/KEY: Protein
LOCATION: 1..669
OTHER INFORMATION: /note- "C ELEGANS RECEPTOR KINASE"
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                               ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENISGNGGPGTIKKISFPEGL 62
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                                                                                                                                                               l Similarity
39; Conserv
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OPPERMANN, HERMANN
KUBERASAMPATH, THANGAVEL
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Pred. No.
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                                                                                                                                                                                                                    Query Match
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INFORMATION FOR SEQ ID NO:
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APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 16-DEC-1994
ATTORNEY/AGENT INFORMATION:
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APPLICATION NUMBER: US 08/357,533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
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 309
                             120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
                                                              260 MPNNMKDMLDVLEETS --
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                                                                                                                                                                                                                                                                                   LOCATION: 1..669
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                         NAME/KEY: Protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: CLASSIFICATION:
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OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                            8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENISGNGGPGTIKKISFPEGL 62
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---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344
                                                                                        PEKYVKDRVDEVDHTNEKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
                                                                                                                          ETENNVPMVTM-----GDGAGSSVPEVAPIEQQGSTMSTSAGN-----SFPPGI
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39; Conserv
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OPPERMANN, HEI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34,637
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                                                                                                                                                                                                       Score 79; DB 2;
Pred. No. 2.2;
                                                            -GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308
                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Version
                                                                                                                                                                                                                    Length 669
                                                                                                                                                                                         Indels
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RESULT 14
US-08-316-650-12
; Sequence 12, Application US/08316650
; Patent No. 5942496
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER: 34,637
REFERENCE/DOCKET NUMBER: CRP-
TELECOMMUNICATION INFORMATION:
TELEPHONE: (508)-435-9001
TELEFAX: (508)-435-0992
INFORMATION: FOR SEQ ID NO: 8:
                                                                                                                                                                                                                                                                                                                              Query Match 9.7%; Score 79; DB Best Local Similarity 24.5%; Pred. No. 2.2; Matches 39; Conservative 25; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent No.
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APPLICANT:
APPLICANT:
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MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US 08/357,533 FILING DATE: 16-DEC-1994 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
PRIOR APPLICATION DATA:
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APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: NOVEL MORPHOGEN CELL SURFACE RECEPTOR NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
                                                                                                                309
                                                                                                                                                120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
                                                                                                                                                                                   260 MPNNMKDMLDVLEETS------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS--
                                                                                                                                                                                                                                                           216 ETENNVPMVTM-----GDGAGSSVPEVAPIEQQGSTMSTSAGN-----SFPPGI
                                                                                                                                                                                                                         63
                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: Protein
LOCATION: 1.669
OTHER INFORMATION: /note= "C ELEGANS RECEPTOR KINASE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
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TOPOLOGY: lin
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                                                                                                                                                                                                          PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
                                                                                                                                                                                                                                                                                          ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENISGNGGPGTIKKISFPEGL 62
                                                                                                              ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  669 amino acids
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KUBERASAMPATH, THANGAVEL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
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                                                                                                                                                                                                                                                                                                                                                                  DB 3;
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                                                                                                                                                                                                                                                                                                                                                                Length 669;
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                                                                                                                          Sequence 12, Application GENERAL INFORMATION:
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: (713) 789-267
TELEX: 79-0924
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 1442 amino aci
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TOPOLOGY: lin
MOLECULE TYPE: |
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APPLICANT:
                               TITLE OF INVENTION: ME
TITLE OF INVENTION: CE
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                      1188 PDPMQYM--RADEADSTLRQHDVEV-----DATLKSLNNQIESIRSPDGSRKNPARTCQ 1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: UM
TELECOMMUNICATION INFORMATION:
TELEPHONE: (512) 418-3000
TELEFAX: (713) 789-2679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
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APPLICATION NUMBER: US |
FILING DATE: 30-SEP-199
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
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                                                                                                                                                                                                                                   1240 DLKLCHPEWKSGDYWIDPNQGCTLDAMKVFCNMETGET 1277
                                                                                                                                                                                                                                                                                                                                                                                1130 DGSNGIPGPIGPPGPRGRSGETGPVGPPGSPGPPGPPGPPGPPGI--DMSAFAGLGQREKG 1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                   113 ILKISNKYHTKGDHEVKAEQ-----VKASKEMGET 142
                                                                                                                                                                                                                                                                                                                                          63 --PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGG-----S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: FILING DATE: 30-SE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                   25 DGDNLFP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Parker, David L. REGISTRATION NUMBER: 32,165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: USA
ZIP: 77210
 STREET:
                ADDRESSEE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid
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P.O.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1442 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Roessler, Blake J. Goldstein, Steven A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
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Arnold, White & Durkee
D. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arnold,
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                                                                     METHODS AND COMPOSITIONS FOR STIMULATING BONE CELLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                   9.5%; Score 78; DB 2; Length 1442; 24.1%; Pred. No. 8.8; tive 18; Mismatches 52; Indels
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                                                                                                                                          PC/TUS9502251
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Search completed: December 11, 2000, 10:41:41 Job time: 198 sec
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FILING DATE: 18-FEB-1994
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: PAIKET, DAVIG L.
REGISTRATION NUMBER: 32,165
REFERENCE/DOCKET NUMBER: UMICOOPP-
TELECOMMUNICATION INFORMATION:
TELEPHONE: (512) 418-3000
TELEFAX: (713) 789-2679
INFORMATION FOR SEO ID NO: 12:
SEQUENCE CHARACTERISTICS:
LENGTH: 1442 amino acids
TYPE: amino acids
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: DESTICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCT-US95-02251-12
                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 9.5%; Score 78; DB 4; Length 1442; Best Local Similarity 24.1%; Pred. No. 8.8; Matches 38; Conservative 18; Mismatches 52; Indels 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS/ASCII

SOFTWARE: Patentin Release #1.0, Version

SOFTWARE: #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: PCT/US95/02251

FILING DATE: CONCURRENTLY HEREWITH

CLASSIFICATION:
                                                                                                                                                                                                            1188 PDPMQYM--RADEADSTLRQHDVEV-----DATLKSLNNQIESIRSPDGSRKNPARTCQ 1239
                                                                                                                                                                                                                                                                                                        1130 DGSNGIPGPIGPPGPRGRSGETGPVGPPGSPGPPGPPGPPGPGI--DMSAFAGLGQREKG 1187
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APPLICATION NUMBER: US 08/316,650
FILING DATE: 30-SEP-1994
CLASSIFICATION:
                                                                                                                  1240 DLKLCHPEWKSGDYWIDPNQGCTLDAMKVFCNMETGET 1277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: peptide
                                                                                                                                                               113 ILKISNKYHTKGDHEVKAEQ-----VKASKEMGET 142
                                                                                                                                                                                                                                             63 --PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGG------S 112
                                                                                                                                                                                                                                                                                                                                              CITY: Houston
STATE: Texas
COUNTRY: United States of America
ZIP: 77210
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